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NEWS LOGIN

NEWS IPC8

NEWS X25

TERMINAL (ENTER 1, 2, 3, OR ?):2

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                Web Page URLs for STN Seminar Schedule - N. America
NEWS
                 "Ask CAS" for self-help around the clock
NEWS
     2
                The Derwent World Patents Index suite of databases on STN
        OCT 23
NEWS
     3
                has been enhanced and reloaded
                CHEMLIST enhanced with new search and display field
NEWS
        OCT 30
                 JAPIO enhanced with IPC 8 features and functionality
NEWS
     5
        NOV 03
                 CA/CAplus F-Term thesaurus enhanced
NEWS
     6
        NOV 10
                 STN Express with Discover! free maintenance release Version
     7
        NOV 10
NEWS
                 8.01c now available
                 CA/CAplus to MARPAT accession number crossover limit increased
        NOV 20
NEWS 8
                 to 50,000
                 CAS REGISTRY updated with new ambiguity codes
        DEC 01
NEWS 9
        DEC 11
                 CAS REGISTRY chemical nomenclature enhanced
NEWS 10
                 WPIDS/WPINDEX/WPIX manual codes updated
NEWS 11
        DEC 14
                 GBFULL and FRFULL enhanced with IPC 8 features and
NEWS 12
        DEC 14
                 functionality
                 CA/CAplus pre-1967 chemical substance index entries enhanced
        DEC 18
NEWS 13
                 with preparation role
                 CA/CAplus patent kind codes updated
        DEC 18
NEWS 14
                 MARPAT to CA/CAplus accession number crossover limit increased
NEWS 15
        DEC 18
                 to 50,000
                 MEDLINE updated in preparation for 2007 reload
NEWS 16
        DEC 18
                 CA/CAplus enhanced with more pre-1907 records
NEWS 17
        DEC 27
                 CHEMLIST enhanced with New Zealand Inventory of Chemicals
NEWS 18
        JAN 08
        JAN 16 CA/CAplus Company Name Thesaurus enhanced and reloaded
NEWS 19
                 IPC version 2007.01 thesaurus available on STN
NEWS 20
        JAN 16
        JAN 16 WPIDS/WPINDEX/WPIX enhanced with IPC 8 reclassification data
NEWS 21
                 CA/CAplus updated with revised CAS roles
        JAN 22
NEWS 22
                 CA/CAplus enhanced with patent applications from India
NEWS 23
        JAN 22
                 PHAR reloaded with new search and display fields
NEWS 24
         JAN 29
                 CAS Registry Number crossover limit increased to 300,000 in
NEWS 25
         JAN 29
                 multiple databases
             NOVEMBER 10 CURRENT WINDOWS VERSION IS V8.01c, CURRENT
NEWS EXPRESS
              MACINTOSH VERSION IS V6.0c(ENG) AND V6.0Jc(JP),
              AND CURRENT DISCOVER FILE IS DATED 25 SEPTEMBER 2006.
```

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=> fil reg
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SINCE FILE TOTAL SESSION 0.21 0.21

FULL ESTIMATED COST

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TSCA INFORMATION NOW CURRENT THROUGH June 30, 2006

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http://www.cas.org/ONLINE/UG/regprops.html

Uploading C:\Program Files\Stnexp\Queries\10527062.str

chain nodes :
6 7 8 9 10 11 13 19 20 21 22 23 2
ring nodes :
1 2 3 4 5 12 14 15 16 17 18

chain bonds :

2-6 3-22 6-7 6-13 7-8 8-9 9-10 9-19 10-11 11-12 19-20 19-21 22-23

22-24

ring bonds :

1-2 1-5 2-3 3-4 4-5 12-14 12-18 14-15 15-16 16-17 17-18

exact/norm bonds :

1-2 2-3 2-6 6-13 7-8 8-9 22-23 22-24

exact bonds :

1-5 3-4 3-22 4-5 6-7 9-10 9-19 10-11 11-12

normalized bonds :

12-14 12-18 14-15 15-16 16-17 17-18 19-20 19-21

isolated ring systems :

containing 1 : 12 :

Match level :

1:Atom 2:Atom 3:Atom 4:Atom 5:Atom 6:CLASS 7:CLASS 8:CLASS 9:CLASS

10:CLASS 11:CLASS 12:Atom 13:CLASS 14:Atom 15:Atom 16:Atom 17:Atom 18:Atom

19:CLASS 20:CLASS 21:CLASS 22:CLASS 23:CLASS 24:CLASS

L1 STRUCTURE UPLOADED

=> d 11

L1 HAS NO ANSWERS

L1 STR

Structure attributes must be viewed using STN Express query preparation.

=> s 11

SAMPLE SEARCH INITIATED 08:17:02 FILE 'REGISTRY'

SAMPLE SCREEN SEARCH COMPLETED - 142 TO ITERATE

100.0% PROCESSED 142 IT

142 ITERATIONS

14 ANSWERS

SEARCH TIME: 00.00.01

FULL FILE PROJECTIONS: ONLINE **COMPLETE**

BATCH **COMPLETE**

PROJECTED ITERATIONS: 2126 TO 3554

PROJECTED ANSWERS: 56 TO 504

L2 14 SEA SSS SAM L1

=> s 11 full FULL SEARCH INITIATED 08:17:06 FILE 'REGISTRY' FULL SCREEN SEARCH COMPLETED - 2944 TO ITERATE

100.0% PROCESSED 2944 ITERATIONS

311 ANSWERS

SEARCH TIME: 00.00.01

L3 311 SEA SSS FUL L1

=> fil hcaplus COST IN U.S. DOLLARS

SINCE FILE TOTAL ENTRY SESSION 172.10 172.31

FULL ESTIMATED COST

FILE 'HCAPLUS' ENTERED AT 08:17:11 ON 09 FEB 2007
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FILE COVERS 1907 - 9 Feb 2007 VOL 146 ISS 8 FILE LAST UPDATED: 8 Feb 2007 (20070208/ED)

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This file contains CAS Registry Numbers for easy and accurate substance identification.

=> s 13 L4 2253 L3

=> fil reg COST IN U.S. DOLLARS

SINCE FILE TOTAL ENTRY SESSION 5.20 177.51

FULL ESTIMATED COST

FILE 'REGISTRY' ENTERED AT 08:18:20 ON 09 FEB 2007
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TSCA INFORMATION NOW CURRENT THROUGH June 30, 2006

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REGISTRY includes numerically searchable data for experimental and predicted properties as well as tags indicating availability of experimental property data in the original document. For information on property searching in REGISTRY, refer to:

http://www.cas.org/ONLINE/UG/regprops.html

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chain nodes : 20 21 22 23 24 26 27 29 28 6 7 8 9 10 11 13 19 ring nodes : 1 2 3 4 5 12 14 15 16 17 18 chain bonds : 2-6 3-22 6-7 6-13 7-8 7-31 7-32 8-9 9-10 9-19 9-30 10-11 10-28 10-29 11-12 11-26 11-27 19-20 19-21 22-23 22-24 23-33 ring bonds : 3-4 4-5 12-14 12-18 14-15 15-16 16-17 17-18 1-2 1-5 2-3 exact/norm bonds : 1-2 2-3 2-6 6-13 7-8 8-9 22-23 22-24 23-33 exact bonds : 1-5 3-4 3-22 4-5 6-7 7-31 7-32 9-10 9-19 9-30 10-11 10-28 10-29 11-12 11-26 11-27 normalized bonds : 12-14 12-18 14-15 15-16 16-17 17-18 19-20 19-21 isolated ring systems : containing 1 : 12 :

Match level:
1:Atom 2:Atom 3:Atom 4:Atom 5:Atom 6:CLASS 7:CLASS 8:CLASS 9:CLASS
10:CLASS 11:CLASS 12:Atom 13:CLASS 14:Atom 15:Atom 16:Atom 17:Atom 18:Atom
19:CLASS 20:CLASS 21:CLASS 22:CLASS 23:CLASS 24:CLASS 26:CLASS 27:CLASS
28:CLASS 29:CLASS 30:CLASS 31:CLASS 32:CLASS 33:CLASS

=> d 15 L5 HAS NO ANSWERS L5 STR

Structure attributes must be viewed using STN Express query preparation.

=> s 15

SAMPLE SEARCH INITIATED 08:19:56 FILE 'REGISTRY'
SAMPLE SCREEN SEARCH COMPLETED - 142 TO ITERATE

100.0% PROCESSED

142 ITERATIONS

1 ANSWERS

SEARCH TIME: 00.00.01

FULL FILE PROJECTIONS: ONLINE **COMPLETE**

BATCH **COMPLETE**

PROJECTED ITERATIONS:

2126 TO 3554 1 TO 80

PROJECTED ANSWERS: 1 TO

L6

1 SEA SSS SAM L5

=> s 15 full

FULL SEARCH INITIATED 08:20:00 FILE 'REGISTRY'

FULL SCREEN SEARCH COMPLETED - 2944 TO ITERATE

100.0% PROCESSED 2944 ITERATIONS

37 ANSWERS

SEARCH TIME: 00.00.01

L7 37 SEA SSS FUL L5

=> fil hcaplus

COST IN U.S. DOLLARS

FULL ESTIMATED COST

SINCE FILE TOTAL

ENTRY SESSION 173.00 350.51

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=> s 17 L8 10 L7

=> d ibib ed abs hitstr 1-10

Absolute stereochemistry.

```
L8 ANSVER 1 OF 10 HCAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2006:1124123 HCAPLUS
DOCUMENT NUMBER: 145:455276
TITLE: Preparation of amino acid derivatives with high
                                                                                              therapeutic index
Chandran, V. Ravi
INVENTOR(S):
                                                                                              U.S. Pat. Appl. Publ., 139pp.
CODEN: USXXCO
 PATENT ASSIGNEE(5):
DOCUMENT TYPE:
                                                                                              Patent
                                                                                          English
3
FAMILY ACC. NUM. COUNT:
PATENT INFORMATION:
                                                                                                                                                                                                                                                              DATE
                 PATENT NO.
                                                                                              KIND
                                                                                                                        DATE
                                                                                                                                                                      APPLICATION NO.
                                                                                                                       20061026
20050526
                  US 2006241017
                                                                                                A1
A2
                                                                                                                                                                      US 2006-343557
WO 2004-US24901
                             2005046575
                                2005046575

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BB, BW, BY, CM, CO, CR, CU, CZ, DB, OK, DM, DZ, EC, EE, EG, ES, GE, GH, GM, ER, HU, ID, IL, II, II, IS, JF, KE, KG, KG, NO, NZ, OH, PG, PH, EU, LV, MA, MD, MG, MK, MN, MY, MK, NO, NZ, OH, PG, PH, EL, PT, RO, RU, SC, SD, SE, SG, TJ, TH, TH, TR, TT, TZ, UA, UG, US, UZ, VC, VN, TU, RW; BW, GH, GH, KE, LS, MY, MZ, NA, SD, SL, SZ, TZ, UG, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, SI, SK, TR, BP, BJ, CF, CG, CI, CH, GA, GN, GQ, GW, SN, TD, TG
                                                                                                                                                                                                                                                    20040729

BZ, CA, CH,

FI, GB, GD,

KR, KZ, LC,

MZ, NA, NI,

SK, SL, SY,

ZA, 2M, ZW

ZM, ZW, ZW,

CZ, DE, DK,

PT, RO, SE,

ML, MR, NE,
                                                                                                                                                                    US 2006-442027
US 2003-491331P
                                                                                                                      20061221
                   US 2006287244
                                                                                                A1
PRIORITY APPLN. INFO.:
                                                                                                                                                                      WO 2004-US24901
US 2006-343557
               Entered STN: 27 Oct 2006
The invention is directed to novel therapeutic compds. comprised of an amino acid bonded to a medicament or drug having a hydroxy, amino, carboxy or acylating function. These high-therapeutic index derivs. have the same utility as the drug from which they are made and they have enhanced pharmacol. and pharmacultical properties. The examples describe the synthesis and activities of amino acid derivs. of propofol. buprofen, ketoprofen, espirin, acetaminophen, cyclosporin A, valproic acid, clopidogrel, damazol, benzapril, enalapril, and fenofibric acid. Thus, (1):buprofen esters of L-serine, L-threonine, and L-hydroxyproline were prepared and examined for analgesic, gastric mucosal irritation, toxicity, and pharmacokinetic properties.

674796-29-3P
RL: RCT (Resctant): SPN (Synthetic preparation): PREF (Preparation):
                    RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT
                 RE: Kol (Resectant) Ser (Symbletic preparation), Float (trapslation), Float (trapslation), Float (Resectant or reagent) (preparation of amino acid derivs. with high therapeutic index) 674796-29 HCAPUUS L-Proline, N-[(15)-1-carboxy-3-phenylpropyl]-L-alanyl-, 2-(1,1-dimethylethyl) ester (SCI) (CA INDEX NAME)
```

ANSWER 2 OF 10 HCAPLUS COPYRIGHT 2007 ACS on STN SSION NUMBER: 2005:99521 HCAPLUS HEAT NUMBER: 142:156329 142:156329
Preparation of α-amino acid benzothiazolyithio esters as intermediates for manufacture of ACE inhibitors
Singh, Girij Pal, Godbole, Himanshu Madhaw, Mahajan, Pravin Raghumath, Wehate, Sagar Purushottam Lupin Limited, India PCT Int. Appl., 108 pp.
COURN: PIXXO2
Patent
English
1 ACCESSION NUMBER: DOCUMENT NUMBER: TITLE: INVENTOR(S): PATENT ASSIGNEE(S): SOURCE: DOCUMENT TYPE: KIND DATE APPLICATION NO. DATE

PATENT NO. KIND DATE APPLICATION NO. DATE

WO 2005010028 A1 20050203 W0 2003-IN257 20030731

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, EH, HU, ID, IL, IN, IS, JP, EE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LY, MA, MD, MG, MK, HN, MM, MM, MZ, LI, NO, NZ, OM, PG, PH, PL, PT, NO, NU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TT, TZ, UA, GG, UZ, VC, VW, TU, ZA, ZM, ZY, MM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CT, CZ, DE, DK, EE, ES, FI, FR, GB, GR, EU, IE, IT, LM, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, CM, GQ, GY, MM, MR, NE, SM, TD, THEN THE APPLN. INFO:

CHER SOURCE(S):

ED Entered STN: 04 Feb 2005

AD The invention relates to esters (S,S)-RCHZCHZCH(CD2R1)NHCHR2CO-X (I; R is alkyl or Ph R1 H or alkyl; R2 is alkyl or aminoalkyl; X is 2-benzothiazolythio which are intermediates in the manufacture of ACE inhibitors I (X is an amino acid or derivative). The intermediate benzothiazolythio esters were prepared by reaction of the appropriate acid or acid chloride with 2,2'-dithiobis (benzthiazole) or 2-cercaptohensothiazole. Thus, treatment of N-[1(5)-(ethoxycarbonyl)-3-phenylpropyl]-N6-(trifluoroacetyl)-L-lysine (preparation given) with (Reactant or reagent)

(preparation of α-amino acid benzothiazolyling with L-proline Rt ester and deprotection, afforded lisanopril dihydrate.

RN 827622-34-4 RCAPJUS

CN L-Proline, N2-[(IR)-1-carbosy-3-phenylpropyl]-N6-(trifluoroacetyl)-L-lysine (preparation); RACT (Reactant or reagent)

(preparation of α-amino acid benzothiazolylthio esters as intermediates for namifacture of ACE inhibitors)

NN 827622-34-4 RCAPJUS

CN L-Proline, N2-[(IR)-1-carbosy-3-phenylpropyl]-N6-(trifluoroacetyl)-L-lysine esters as intermediates for considerative of ACE inhibitors)

Absolute stereochemistry.

ANSWER 1 OF 10 HCAPLUS COPYRIGHT 2007 ACS on STN (Continued)

ANSWER 2 OF 10 HCAPLUS COPYRIGHT 2007 ACS on STN (Continued)

REFERENCE COUNT:

L8 ANSWER 3 OF 10 HCAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2004:1124626 HCAPLUS
TITLE: 142:79913
TITLE: 5004:1124626 HCAPLUS
INVENTOR(S): 4004:1124626 HCAPLUS
INVENT

DOCUMENT TYPE: LANGUAGE: FAMILY ACC. NUM. COUNT: PATENT INFORMATION:

APPLICATION NO. PATENT NO. KIND DATE DATE PATENT NO.

VO 2004110432
V: AE, AG, AL,
CN, CO, CR,
GE, GH, GH,
LX, LR, LS,
NO, NZ, ON,
TJ, TM, TM,
RW: BW, GH,
AZ, BY, KC,
EE, ES, FT,
SI, SK, TR,
SN, TD, TG
AU 2004246821
CA 2529478
EP 1635816
ER 1675816
ER 15, SI, FI,
BR 2004011430
CN 1809345
US 2005004100
NO 2006000268
PRIORITY APPLIN. INFO: A1 20041223 VO 2004-ET51089 20040611
AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CB, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, ER, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LT, LU, LV, HA, MD, MG, HK, MN, MW, MK, HZ, NA, NI, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TR, TT, TZ, UA, UG, US, UZ, VC, VH, VU, ZA, ZH, ZW, KZ, KD, RU, HZ, NA, SD, SL, SZ, TZ, UG, ZH, ZW, KZ, KD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, PR, GB, GR, HU, IE, IT, LU, MC, NI, PL, PT, RO, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, A1 20041223 A1 20041223 A1 20060322 DE, DK, ES, FR, RO, CY, TR, BG, A 20060725 A 20050106 A 20060315 AU 2004-246821 CA 2004-2529478 EP 2004-74179 GB, GR, IT, LI, LU, CZ, EE, HU, PL, SK BB 2004-11430 CN 2004-869038 NO 2004-869038 20040611 20040611 20040611 20040617 20060118 20030619 20040611

OTHER SOURCE(5): MARPAT 142:79913

OTHER SOURCE(5): MARPAT 142:79913

Entered STM: 23 Dec 2004

AB Disclosure is compds. with a general formula of A-(X1-ONO2)S, wherein A is a known ACE-inhibitor such as enalapril and X1 is a spacer such as a (C1-C6)-alkylene. The compds. can be used as ACE-inhibitors for the treatment of cardiovascular and renal diseases and inflammatory processes. The compds. have an improved pharmacol. activity when compared with the structurally closest related prior art compound For example, synthesized N-[(1S)-1-ethoxycarbonyl-3-phenylpropyl]-L-alanyl-L-proline 3-nitroxypropyl ester bydrogen maleate was found to have good vasorelaxation property.

Bl1787-07-2 811787-09-4 811787-11-8

11787-13-0 811787-12-0 811787-13-2

211787-25-4 811787-27-6 811787-29-8

811787-31-2 811787-33-4 811787-35-6

EP 2003-101750 WO 2004-EP51089

ANSWER 3 OF 10 HCAPLUS COPYRIGHT 2007 ACS on STN (Continued)

PAGE 1-A

PAGE 1-B

_ NO2

811787-13-0 HCAPLUS
L-Proline, N2-{[15]-1-carboxy-3-phenylpropyl]-N6-{[4(nitrooxy)butoxy]carbonyl}-L-lysyl-, 2-{2-[2-(nitrooxy)ethoxy]ethyl] ester
(9C1) (CA INDEX NAME)

Absolute stereochemistry.

PAGE 1-A

ANSWER 3 OF 10 HCAPLUS COPYRIGHT 2007 ACS on STN (Continued)
811787-38-9 811787-39-0

RL: THU (Therapeuric use); BIOL (Biological study); USES (Uses)
(enalapril-nitroxy derivs. and related compd. as ACE inhibitors for the
treatment of cardiovascular and renal diseases)
811787-07-2 HCAPLUS
L-Proline, N2-{(15)-1-carboxy-3-phenylpropyl]-N6-[(4(nitrooxy)butoxy)carbonyl]-L-lysyl-, 2-[3-(nitrooxy)propyl] ester (9CI)
(CA INDEX NAME)

Absolute stereochemistry.

811787-09-4 HCAPLUS
L-Proline, N2-[(15)-1-carboxy-3-phenylpropy1]-N6-[(4(nitrooxy)butoxy)carbonyl]-L-lysyl-, 2-[4-(nitrooxy)butyl] ester (9CI)
(CA INDEX NAME)

Absolute stereochemistry.

811787-11-8 HCAPLUS L-Proline, N2-{[15]-1-carboxy-3-phenylpropy1}-N6-[[4-(nitroxy)butoxy]carbonyl]-L-lysyl-, 2-[2-{[2-(nitrooxy)ethyl]thio]ethyl] ester (9CI) (CA INDEX NAME)

ANSWER 3 OF 10 HCAPLUS COPYRIGHT 2007 ACS on STN (Continued)

PAGE 1-B

_ NO2

811787-15-2 HCAPLUS L-Proline, N2-[(15)-1-carboxy-3-phenylpropyl]-N6-[[(nltrooxy)mathoxy)carbonyl]-L-lysyl-, 2-[3-(nltrooxy)propyl] ester (9CI) (CA INDEX NAME)

Absolute stereochemistry.

811787-17-4 HCAPLUS
L-Prolline, N2-[(15)-1-carboxy-3-phenylpropy1]-N6[((nitrooxy)methoxy]carbonyl]-L-lysyl-, 2-[4-(nitrooxy)butyl] ester (9CI)
(CA INDEX NAME)

Absolute stereochemistry

811787-19-6 ECAPLUS L-Proline, N2-[(15)-1-carboxy-3-phenylpropyl]-N6-[(nitrooxy)methoxy]carboxyl]-L-lysyl-, 2-[2-[2-(nitrooxy)ethoxy]ethyl] ester (9CI) (CA INDEX NAME)

Absolute stereochemistry.

L8 ANSWER 3 OF 10 HCAPLUS COPYRIGHT 2007 ACS on STN (Continued)

811787-21-0 HCAPLUS
L-Proline, N2-[(15)-1-carboxy-3-phenylpropyl]-N6[(nitrooxy)methoxy]carbonyl]-L-lysyl-, 2-[2-[(2(nitrooxy)ethyl]thio]ethyl] ester (9CI) (CA INDEX NAME)

Absolute stereochemistry.

811787-23-2 HCAPLUS
L-Proline, N2-[(15)-1-carboxy-3-phenylpropyl]-N6-[(1(nitrooxy)grarboxy]-L-lysyl-, 2-[3-(nitrooxy)propyl] ester (9CI)
(CA INDEX NAME)

811787-25-4 HCAPLUS
L-Proline, N2-[(15)-1-carboxy-3-phenylpropyl]-N6-[[1(nitrooxy)ethoxy]carbonyl]-L-lysyl-, 2-[4-(nitrooxy)butyl] ester (9CI)

ANSWER 3 OF 10 HCAPLUS COPYRIGHT 2007 ACS on STN (Continued)

811787-31-2 HCAPLUS L-Proline, N-[(1S)-1-carboxy-3-phenylpropyl]-L-alenyl-2-[3-(nitrooxy)propyl] ester (9C1) (CA INDEX NAME)

Absolute stereochemistry.

811787-33-4 HCAPLUS L-Proline, N-[(1S)-1-carboxy-3-phenylpropyl]-L-alanyl-, 2-[4-(nitrooxy)butyl] ester (9CI) (CA INDEX NAME)

Absolute stereochemistry.

811787-35-6 HCAPLUS L-Proline, N-[(1S)-1-carboxy-3-phenylpropyl]-L-alanyl-, 2-[5-(nitrooxy)pentyl] ester (9CI) (CA INDEX NAME)

Absolute stereochemistry.

811787-38-9 HCAPLUS L-Proline, N-[(15)-1-carboxy-3-phenylpropyl]-L-alanyl-,

ANSWER 3 OF 10 HCAPLUS COPYRIGHT 2007 ACS ON STN (CA INDEX NAME) (Continued)

Absolute stereochemistry.

811787-27-6 RCAPLUS
L-Proline, N2-{(15)-1-carboxy-3-phenylpropyl}-N6-{(1(nitrooxy)ethoxy|carboxyl]-L-1ysyl-, 2-{2-{2-(nitrooxy)ethoxy}ethyl} ester
(9CI) (CA INDEX NAME)

Absolute stereochemistry.

811787-29-8 HCAPLUS L-Proline, W2-[(15)-1-carboxy-3-phenylpropy1]-N6-[[1- ... (nitroxy)ethoxy)[actboxyl]-L-lysyl-, 2-[2-[[2-(nitroxy)ethyl]thio]ethyl] ester (9C1) (CA INDEX NAME)

Absolute stereochemistry.

ANSWER 3 OF 10 HCAPLUS COPYRIGHT 2007 ACS on STN (Continued) 2-[2-[2-(nitrooxy)ethoxy]ethyl] ester (9CI) (CA INDEX NAME)

Absolute stereochemistry.

811787-39-0 HCAPLUS L-Proline, N-{(15)-1-carboxy-3-phenylpropyl)-L-alanyl-, 2-{2-{(2-(introxy)ethyl)thio|ethyl) ester (9CI) (CA INDEX NAME)

Absolute stereochemistry.

THERE ARE 1 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT REFERENCE COUNT:

L9 ANSWER 4 OF 10 HCAPLUS COPYRIGHT 2007 ACS on STN ACCESSION NUMBER: 2004:252532 HCAPLUS DOCUMENT NUMBER: 140:276202 TITLE: Proline exters and continued to the continued to th

140:276202
Proline esters and preparations containing the same for percutaneous administration Furushi, Takayukir Minami, Kunihiro; Minowa, Takayukir Komine, Miho; Kimura, Kunihiko Toaeiyo Ltd., Japan PCT Int. Appl., 38 pp. CODEN: PIXXD2
Patent INVENTOR(S):

PATENT ASSIGNEE(S): SOURCE:

DOCUMENT TYPE:

FAMILY ACC. NUM. COUNT: PATENT INFORMATION:

				DATE	APPLICATION NO.	
					WO 2003-JP11420	
W.	AF AG	MT.	AM A	r All. AZ.	BA, BB, BG, BR, BY,	BZ. CA. CH. CN.
•••					DZ, EC, EE, EG, ES,	
					IS, JP, KE, KG, KP,	
					MG, MK, MN, MW, MX,	
					SC, SD, SE, SG, SK,	
					UZ, VC, VN, YU, ZA,	
RW:					SL, SZ, TZ, UG, ZM,	
					BE, BG, CH, CY, CZ,	
					LU, MC, NL, PT, RO,	
	BF, BJ,	CF.	CG, C	I, CM, GA,	GN, GQ, GW, ML, MR,	NE, SN, TD, TG
CA 2498	757		A1	20040325	CA 2003-2498757	20030908
AU 2003	261989		A1	20040430	AU 2003-261989	20030908
EP 1538	158		A1	20050608	EP 2003-795307	20030908
п.	AT. RE	CH.	DE. D	K. KS. FR.	GB, GR, IT, LI, LU,	NL, SE, MC, PT,
	TR. ST	1.7	I.V. P	I. RO. HK.	CY, AL, TR, BG, CZ,	EE, HU, SK
CN 1691	30		Δ.,	20051012	CN 2003-821438	20030908
C# 1001	200222		21	2005122	US 2005-527062	20050309
			n.	20031223	JP 2002-265276	a 20020911
RIORITY APP	PM. INT	<i>.</i> .			WO 2003-JP11420	
						. 25050500

MARPAT 140:276202

WO 2003-JF11420 W 20030908

CTHER SOURCE(S): MARPAT 140:276202

ED Entered STN: 26 Mar 2004

Al 1-[N-[1(S)-1-catobay-3-phenylpropyl]-L-alanyl]-L-proline esters or ...

pharmaceutically acceptable salts thereof are useful as a prodrug for enalgarilat, which is a medicine useful in the prevention of and treatments for, e.g., circulatory diseases such as hypertension, cardiac diseases (caddach hypertrophy, cardiac failure, myocardial infarct, etc.), nephritis, and apoplexy. A medicine containing either of these is suitable for use as a preparation for percutaneous administration, especially an adhesive

adhesive
patch, from the standpoints of medicinal activity and use. For example, a
composition was formulated containing
1-{N-{(1S)-1-carboxy-3-phenylpropyl}-Lalanyl]-1-proline 2-hydroxyethyl ester (preparation given), iso-Pr
myristate,
lauromacrogol, Quintac 3421, Quintone M100, and paraffin oils and spread
on a PET film to give an adhesive patch.
IT 674796-29-3P, 1-{N-{(1S)-1-Carboxy-3-phenylpropyl}-L-alanyl}-Lproline tetr-butyl ester
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT

ANSWER 4 OF 10 HCAPLUS COPYRIGHT 2007 ACS on STN

674285-98-4 HCAPLUS L-Proline, N-[(IS)-1-carboxy-3-phenylpropyl]-L-alanyl-, 2-(4-hydroxybutyl) ester (9CI) (CA INDEX NAME)

Absolute stereochemistry.

674285-99-5 HCAPLUS L-Proline, N-[(15)-1-carboxy-3-phenylpropyl]-L-alanyl-, 2-[2-(2-methoxyethoxy)ethyl] ester (9CI) (CA INDEX NAME)

674286-00-1 HCAPLUS L-Prolline, N-[(15)-1-carboxy-3-phenylpropyl]-L-alanyl-, 2-(2-methoxyethyl) ester (9C1) (CA INDEX NAME)

Absolute stereochemistry.

ANSWER 4 OF 10 HCAPLUS COPYRIGHT 2007 ACS on STN ANSWER 4 OF 10 HCAPLUS COPYRIGHT 2007 ALS on Six (Continues), (Reactant or reagent) (prepn. of proline esters as prodrugs for enalaprilat for percutaneous administration) 674796-29-3 HCAPLUS L-Proline, N-[(15)-1-carboxy-3-phenylpropyl]-L-alanyl-, 2-(1,1-dimethylethyl) ester (9CI) (CA INDEX NAME)

Absolute stereochemistry.

IT 674285-96-2P 674285-97-3P 674285-98-4P
674285-99-5P 674286-00-1P
RL: SPN (Synthetic preparation), THU (Therapeutic use), BIOL (Biological study), PREP (Preparation), USES (Uses)
(preparation of proline esters as prodrugs for enalaprilat for percutaneous
administration)
RN 674285-96-2 BCAPUS
C L-Proline, N-[(15)-1-carboxy-3-phenylpropyl]-L-alanyl-, 2-(2-bydroxyethyl)
ester (9CI) (CA INDEX NAME)

Absolute stereochemistry.

674285-97-3 HCAPLUS L-Proline, N-[(15)-1-carboxy-3-phenylpropyl]-L-alanyl-, 2-(3-hydroxypropyl) ester (9CI) (CA INDEX NAME)

Absolute stereochemistry.

(Continued) ANSWER 4 OF 10 HCAPLUS COPYRIGHT 2007 ACS on STN

3

REFERENCE COUNT:

ANSWER 5 OF 10 HCAPLUS COPYRIGHT 2007 ACS ON STN SSION NUMBER: 1994:630627 HCAPLUS MENT NUMBER: 121:230627

ACCESSION NUMBER:

DOCUMENT NUMBER:

121:230627
Design, synthesis and enzyme inhibitory activities of new trifluoromethyl-containing inhibitors for angiotensin converting enzyme Ojima, Ivaor Jameison, Fabian A.; Pete, Bela: Radunz, Hans: Schittenhelm, Christiner Lindner, Hans J.; Emith, Arturo E.
Dep. Chem., State Univ. New York, Stony Brook, NY, 11794-3400, USA
Drug Design and Discovery (1994), 11(2), 91-113
CODEN: DDDIEV; ISSN: 1055-9612
Journal

AUTHOR(S):

CORPORATE SOURCE: SOURCE:

DOCUMENT TYPE: Journal English Entered STN: 12 Nov 1994

Trifluoromethyl-containing analogs of captopril (I) as well as analogs and homologs of enalaprilat were prepared and evaluated for inhibition of angiotensin converting system (ACE). Direct substitution of trifluoromethyl for Me produced a very potent captopril analog with an ICSO of 3 + 10-10 M in vitro. Bydrophobicity and conformational effects of trifluoromethyl group are among the reasons accounting for this activity. Structure-activity relation is studied based on mol. mechanics calons. using a II-5CF-mol. mechanics program (PIMM) as well as SYBYL mol. mechanics program. Simultaneous incorporation of trifluoromethyl and an indoline residue unspectedly yielded a less potent captopril analog (ICSO = 8 + 10-8 M). Enalaprilat analogs derived from replacement of the alanine residue with trifluoromorvaline and trifluoromorleucine residues yellowed the structure-activity relation for these fluoreonalaprilat analogs is discussed in comparison with known analogs.

150140-42-22 150140-43-3P 158249-81-IP

158249-82-2P

15829-82-2P
RL: SPM (Synthetic preparation): PREP (Preparation)
(preparation of, as intermediate for captopril or enalaprilat analog)
15810-42-2 HCAPLUS
L-Proline, 1-[N-(1-carboxy-3-phenylpropyl)-5,5,5-trifluoro-L-norvalyl]-,
2-(1,1-dimethylethyl) ester, (5)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

ANSWER 5 OF 10 HCAPLUS COPYRIGHT 2007 ACS on STN Absolute stereochemistry.

ANSWER 5 OF 10 HCAPLUS COPYRIGHT 2007 ACS on STN (Continued)

158140-43-3 HCAPLUS L-Proline, 1-[N-(1-carboxy-3-phenylpropyl)-6,6,6-trifluoro-L-norleucyl]-, 2-(1,1-dimethylethyl) ester, (5)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

158249-81-1 HCAPLUS L-Prollne, 1-[N-(1-carboxy-3-phenylpropyl)-5,5,5-trifluoro-L-norvalyl]-, 2-(1,1-dimethylethyl) ester, (R)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

158249-82-2. HCAPLUS L-Proline, 1-[N-(1-carboky-3-phenylpropyl)-6,6,6-trifluoro-L-norleucyl]-, 2-(1,1-dimethylethyl) ester, (R)- [9CI] (CA INDEX NAME)

L8 ANSWER 6 OF 10 HCAPLUS COPYRIGHT 2007 ACS ON STN ACCESSION NUMBER: 1990:235824 HCAPLUS
DOCUMENT NUMBER: 112:235824

DOCUMENT NUMBER:

AUTHOR (S):

112:235824
Angiotensin converting enzyme inhibitors. 9. Novel
[[N-(1-carboxyl-3-phenylpropyl) amino] acyl]glycine
derivatives with duretic activity
Barton, Jeffrey N.; Piwinski, John J.; Skiles, Jerry
W.; Regan, John R.; Henard, Paul R.; Desai, Rohit;
Golec, F. S.; Reilly, Laurence W.; Goetzen, Thomas; et

PORATE SOURCE:

ROTE:

ACE:

JOURNAL TYPE:

GUAGE:

EN SOURCE(5):

Entered STN:

21

ROTE Cent. Res., Horsham, PA, 19044, USA
JOURNAL CHEMISTRY (1990), 33(6), 1600-6
CODEN: JMCMAR: ISSN: 0022-2623
JOURNAL
English
English
CASREACT 112:235824 CORPORATE SOURCE: SOURCE:

DOCUMENT TYPE:

LANGUAGE: OTHER SOURCE(S):

A series of mols. having sulfonamide diuretic moieties covalently linked to non-sulfhydryl angiotensia converting enzyme (ACE) inhibitors, e.g. I [R = Et, X = Ala, Z = NMecH2, (S)-CH(CHZCEMe2); R = H, X = Ala, Lys, Lys(CO2CEMP2), Z = CH2; R = H, X = Ala, Z = CH2)3, (S)-CEMe1, vere prepared and tested for both activities. I50 values for ACE inhibition as low as 7 nM were observed Discernable diuretic activity was seen for several hydrochlorothiazide-based mols. Effects of the ACE inhibitory and diuretic activity was seen for several 126849-86-3P

IT RL: RCT (Reactant): SPN (Synthetic preparation): PREP (Preparation): RACT

RE: MCT (Meatchart) SrM (symbolic preparation), flag (Meatchart or reagent) (Preparation and deblocking of, with hydrogen chloride) 126849-86-3 ECAPLUS (Preparation and deblocking of, with hydrogen chloride) L-Proline, 1-[N6-[3-(aminosulfonyl)-4-chlorobenzoyl]-N2-(1-carboxy-3-phenylpropyl)-L-lysyl]-, 2-(1,1-dimethylethyl) ester, (5)- (9CI) (CA INDEX NAME)

ANSWER 6 OF 10 HCAPLUS COPYRIGHT 2007 ACS on STN

ANSWER 7 OF 10 HCAPLUS COPYRIGHT 2007 ACS on STN (Continued)
RL: RCT (Reactant): RACT (Reactant or reagent)
(reaction of, in prepn. of diuretics and antihypertensives)
85918-74-7 HCAPLUS
L-Proline, 1-(N-(1-carboxy-3-phenylpropyl)-L-alanyl)-, 2-(phenylmethyl)
ester, (S)- (9CI) (CA INDEX NAME)

L8 ANSWER 7 OF 10 HCAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER:
1989:458356 HCAPLUS
111:58356
111:58356
11VENTOR(5):
PATENT ASSIGNEE(5):
SOURCE:
DOCUMENT TYPE:

Bretting Claus Aage Svensgaard; Bruun, Hertar Feit,
Peter Verner: Godtfreden, Wagn Ole
Lee Pharmaceutical Products Ltd. A/S, Den.
SCHOOL:
Brit. UK Pat. Appl., 35 pp.
COUDEN: BAXXDU
Patent

DOCUMENT TYPE: LANGUAGE: English

FAMILY ACC. NUM. COUNT: PATENT INFORMATION:

APPLICATION NO. DATE KIND DATE PATENT NO. GB 2207129 A
PRIORITY APPLN. INFO.:
ED Entered STN: 20 Aug 1989 19890125 19870713

(S,S)-PhCH2CH2CH(CO2R1)NHCHMeCOR [I; R = azole and azine groups Q1-Q3, RNMCH2CO2H; ≥1 of R1,R2 = RSCO2Z and the other may be H, alky1, aralky1; R = 2-indany1; R5 = residue of a compound with diucetic and/or salucetic activity; Z = CHR3, CH2CH(OH)CH2, CH2CR6:CR7CH2; R3 = H, alky1, aralky1; R6R7 = CO2] were prepared as diucetics and antihypertensives (n data). To 3-ethylamino-4-phenoxy-5-sulfamoylbenzoic acid in CH2C12

data). To 3-ethylamino-4-pmenoxy-3-sulfamojubelcot exto in data containing
NABCO3 and Bu4NHSO4 in H2O was added C1SO3CH2C1 in CH2C12 and stirring was continued 15 min to give the chloromethyl ester Q4CH2C1 which was stirred 6 days with Q3CCCH2Ph (R2 = K) to give Q3CCCH2Ph (R2 = CH2Q4). The latter was hydrogenolized to Q3H (R2 = CH2Q4) with was stirred 5 h with I (R = R1 = H) in DMF containing hydroxybenzotriazole and DCC to give I (R =

Q3, R1 = H, R2 = CH2Q4). 85918-74-7 IT

L8 ANSWER 8 OF 10 HCAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER:
1989:213348 HCAPLUS
110:213348
110:213348
1111E:
Preparation of alanylproline derivatives usable in the drug industry
fodor, Tamasi Fischer, Janos; Stefko, Belas Dobay,
Laszlo
PATENT ASSIGNEE(5):
RICHTER, Gedeon, Vegyeszeti Gyar Rt., Hung.
Hung. Toljes, 16 pp.
CODEN: HINCHER
LANGUAGE:
PAMILY ACC. NUM. COUNT:
PATENT INFORMATION:

DATE KIND DATE APPLICATION NO. PATENT NO. HU 44579 A2
HU 196834 B
PRIORITY APPIN. INFO.:
OTHER SOURCE(S): MARPAI
ED Entered STN: 10 Jun 1989
GI 19860627 19880328 HU 1986-2688 19860627

ни 1986-2688 MARPAT 110:213348

(S) (S) PhCH2CH2CHNHCHR¹CON **(S)** CO2R со₂н

AB Title compds. (I, R = H, protective group; R1 = alkyl, alkylamino) are prepared by reduction of the dihydrofuranone derivs. II.

N-[5(R)-Phenyldihydro2(3H) furanon-3(5)-y1]-(S)-alanyl-(S)-proline benzyl ester-HCl (preparation gives) was hydrogenated in MeOH, over Pd/charcoal, to give N-[1(S)-carboxy-3-phenylpropyl]-(S)-alanyl-(S)-proline.

IT 120439-27-2P
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of)
RN 120439-27-2 HCAPUUS
CN L-Proline, 1-[N-(1-carboxy-3-phenylpropyl)-L-alanyl]-, 2-(1,1-disethylethyl) ester, monohydrochloride, (S)- (9CI) (CA INDEX NAME)

Absolute stereochemistry

ANSWER 8 OF 10 HCAPLUS COPYRIGHT 2007 ACS on STN (Continued)

• HCl

ANSWER 9 OF 10 HCAPLUS COPYRIGHT 2007 ACS on STN (Continued)

97590-00-6 HCAPLUS L-Proline, 1-[N2-(1-carboxy-3-phenylpropyl)-(E)-4,5-didehydro-N6-[(phenylmethoxy)carbonyl]lysyl]-, 2-(phenylmethyl) ester, (S)- (9CI) (CA INDEX NAME)

97590-04-0 HCAPLUS y/syu-us-u mustus L-Proline, 1-[NZ-(1-carboxy-3-phenylpropyl)-(Z)-4,5-didehydro-N6-{(phenylmethoxy)carbonyl}lymyl]-, 2-(phenylmethyl) ester, (R)- (9CI) (CA INDEX NAME)

IT

97531-72-1P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT
(Reactant or reagent)
(preparation and reductive alkylation of, with oxophenylbutanoic acid)
97531-72-1 HCAPLUS
L-Pcoline, 1-[N2-(1-carboxy-3-phenylpropyl)-(E)-4,5-didehydro-N6[(phenylmethoxy)carbonyl]lysyl]-, 2-(phenylmethyl) ester (9CI) (CA INDEX NAME)

ANSWER 9 OF 10 HCAPLUS COPYRIGHT 2007 ACS on STN SSION NUMBER: 1985:471710 HCAPLUS MENT NUMBER: 103:71710 ACCESSION NUMBER:

DOCUMENT NUMBER:

103:17170

M-Carboxymethyl(unsaturated)lysyl and a-(s-aminoalkyl)glycyl amino acid antihypertensive agents
Patchett, Arthur A.; Wu, Mu T.
Merck and Co., Inc., USA
S. African, 64 pp.
CODEN: SYXXAB

PATENT ASSIGNEE(S): SOURCE:

Patent

DOCUMENT TYPE: LANGUAGE:

FAMILY ACC. NUM. COUNT: PATENT INFORMATION:

INVENTOR(S):

APPLICATION NO. DATE PATENT NO. KIND DATE

PATENT NO. KIND DATE APPLICATION NO. DATE

ZA 8302509 A 19831128 ZA 1983-2509 19830411

PRIORITY APPLN. INFO.: US 1982-367199 A 19830412

ELD Entered STN: 07 Sep 1985

AB Title compds. RICH(COZN)RECHR2CON[(CH2) RR3]CHR4COZR [R = H, alkyl, aralkyl, aryl; R1 = B, Cl-12 alkyl, cyclic alkyl, unsatd. alkyl, substituted alkyl, (un)substituted aryl or heteroaryl, etc.; R2 = (CH2)PMC(EH2)RMSES [X = CHCH of C. tplbond.C; R5 = H, alkyl, aralkyl, acyl; p = 0-3; q = 1, 2]; R3 = alkyl, benzofused cycloalkyl or bicycloalkyl, (un)substituted aryl or heteroaryl, substituted alkyl, R4 = H, alkyl; R3 and R4 may be joined with carbon atoms to form a ring; n = 0-4) were prepared as antihypertensives (no data) due to their ability to inhibit angiotensin-converting enzyme. Thus, trans-HZNCHZCH:CHERZCH(NHZ)COZH was treated with N-benzyloxycarbonyloxy-5-norbornene-2,3-dictaboximide in EZO and 0.5M methanolic KOH to give 39% trans-ZNNCHZCH:CHERZCH(NHZ)COZH (Z = PhCHZOZC), which was treated with [Boc) ZO (Boc Me3COZC) in IM NAOH/Me3COH to give 9% trans-ZNNCHZCH:CHERZCH(NHZ)COZH (Z = PhCHZOZC), which was treated with [Boc) ZO (Boc Me3COZC) in IM of yelve trans-ZNHCHZCH:CHERZCH(NHBOC)COZH. The latter was coupled with H-L-Pro-OCHZPh. KII by DC in CHZCI2 containing EXIN to give trans-ZNHCHZCH:CHERZCH(NHBOC)COZH in the latter was isomer A and B. I isomer A was Boc-deblocked by CFSCOZH and then treated with PhCHZCHZCHCCCOZH in the presence of NaBH3CN to give 47% trans-RONHCHZCH:CHERZCH(NHCHC)COZH)CH-CPC-OPA TI (R6 = Z, R7 - CH2Ph), which was deblocked by HBr/HOAc to give 62% II (R6 = R7 = H).

IT 97889-99-69.97590-00-69 97590-04-0P
RL: KCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and deblocking of)
RN 97589-99-6 HCAPLUS

L-Proline, T-(R2-(1-carboxy-3-phenylpropyl) - (E) -4,5-didehydro-N6-[(phenylmethoxy) carbonyl] lysyl] -, 2-(phenylmethyl) ester, (R) - (9CI) (CA

ANSWER 9 OF 10 HCAPLUS COPYRIGHT 2007 ACS on STN

IT

97590-05-1P
RL: SPN (Synthetic preparation), PREP (Preparation)
(preparation of)
97590-05-1 HCAPJUS
L-Proline, 1-[N2-(1-carboxy-3-phenylpropyl)-(Z)-4,5-didehydro-N6-[(phenylaethoxy)carbonyl]]ysyl]-, 2-(phenylmethyl) ester, (S)- (9CI) (CA INDEX NAME)

L8 ANSWER 10 OF 10
ACCESSION NUMBER:
DOCUMENT NUMBER:
1983:488574 HCAPLUS
99:88574
Amino acid derivatives as antihypertensives
Harris, Elbert E.; Patchett, Arthur A.; Tristram,
Edward W.; Wywratt, Matthew J.
Herck and Co., Inc., USA
U.S., 33 pp. Cont.-in-part of U.S. Ser. No. 79,898,
abandoned.
COUDEN: USDKAM
DOCUMENT TYPE:
FAMILY ACC. NUM. COUNT:
FAMILY ACC. NUM. COUNT:
English
English

DOCUMENT TYPE: LANGUAGE: FAMILY ACC. NUM. COUNT: PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 4374829	A	19830222	us 1981-235335	19810217
CS 237325	B2	19850716	CS 1982-1339	19820226
CS 237326	B2	19850716	CS 1982-1340	19820226
CS 237327	B2	19850716	CS 1982-1341	19820226
CS 237328	B2	19850716	CS 1982-1342	19820226
US 4472380	A	19840918	US 1982-423916	19820927
CA 1275349	C2	19901016	CA 1986-518334	19860916
CA 1300313	C2	19920505	CA 1986-518335	19860916
CA 1262684	A2	19891107	CA 1988-576715	19880907
CA 1276559	C2	19901120	CA 1988-576716	19880907
CA 1275350	C2	19901016	CA 1989-607198	19890801
PRIORITY APPLN. INFO.:	Ce	13301010	us 1978-968249 A	2 19781211
PRIORITY APPLA. INFO.:				2 19790507
				2 19791009
				3 19791206
				3 19791211
				3 19791211

CA 1979-341340 A3 19791206
CS 1979-8645 A3 19791206
CS 1979-8645 A3 19791201
CS 1979-8645 A3 19791201
US 1981-235335 A3 19810217

ENTER SOURCE(S):

ENTER SO

Absolute stereochemistry.

ANSWER 10 OF 10 HCAPLUS COPYRIGHT 2007 ACS on STN (Continued)

85918-74-7P
RL: SPN (Synthetic preparation); PREF (Preparation)
(preparation of)
85918-74-7 HCAPIJS
L-Proline, 1-[N-(1-carboxy-3-phenylpropyl)-L-alanyl]-, 2-(phenylmethyl)
ester, (5) - (9C1) (CA INDEX NAME)

=> log y COST IN U.S. DOLLARS	SINCE FILE ENTRY	TOTAL SESSION
FULL ESTIMATED COST	57.90	408.41
DISCOUNT AMOUNTS (FOR QUALIFYING ACCOUNTS)	SINCE FILE ENTRY	TOTAL SESSION
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         OCT 30
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         NOV 03
NEWS
      5
                 CA/CAplus F-Term thesaurus enhanced
        NOV 10
NEWS
      6
                 STN Express with Discover! free maintenance release Version
         NOV 10
NEWS
      7
                 8.01c now available
                 CA/CAplus to MARPAT accession number crossover limit increased
NEWS
      8
         NOV 20
                 to 50,000
                 CAS REGISTRY updated with new ambiguity codes
         DEC 01
NEWS
                 CAS REGISTRY chemical nomenclature enhanced
NEWS 10
         DEC 11
                 WPIDS/WPINDEX/WPIX manual codes updated.
         DEC 14
NEWS 11
                 GBFULL and FRFULL enhanced with IPC 8 features and
NEWS 12
         DEC 14
                 functionality
                 CA/CAplus pre-1967 chemical substance index entries enhanced
NEWS 13
         DEC 18
                 with preparation role
                 CA/CAplus patent kind codes updated
NEWS 14
         DEC 18
                 MARPAT to CA/CAplus accession number crossover limit increased
         DEC 18
NEWS 15
                 to 50,000
                 MEDLINE updated in preparation for 2007 reload
NEWS 16
         DEC 18
                 CA/CAplus enhanced with more pre-1907 records
NEWS 17
         DEC 27
                 CHEMLIST enhanced with New Zealand Inventory of Chemicals
NEWS 18
         JAN 08
                 CA/CAplus Company Name Thesaurus enhanced and reloaded
         JAN 16
NEWS 19
                 IPC version 2007.01 thesaurus available on STN
NEWS 20
         JAN 16
                 WPIDS/WPINDEX/WPIX enhanced with IPC 8 reclassification data
NEWS 21
         JAN 16
                 CA/CAplus updated with revised CAS roles
NEWS 22
         JAN 22
                 CA/CAplus enhanced with patent applications from India
NEWS 23
         JAN 22
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NEWS 24 JAN 29 PHAR reloaded with new search and display fields

NEWS 25 JAN 29 CAS Registry Number crossover limit increased to 300,000 in multiple databases

NEWS 26 FEB 13 CASREACT coverage to be extended

NEWS 27 Feb 15 PATDPASPC enhanced with Drug Approval numbers

NEWS 28 Feb 15 RUSSIAPAT enhanced with pre-1994 records

NEWS 29 Feb 23 KOREAPAT enhanced with IPC 8 features and functionality

NEWS EXPRESS NOVEMBER 10 CURRENT WINDOWS VERSION IS V8.01c, CURRENT MACINTOSH VERSION IS V6.0c(ENG) AND V6.0Jc(JP), AND CURRENT DISCOVER FILE IS DATED 25 SEPTEMBER 2006.

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SINCE FILE TOTAL ENTRY SESSION 0.21 0.21

FULL ESTIMATED COST

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STRUCTURE FILE UPDATES: 22 FEB 2007 HIGHEST RN 922800-14-4 DICTIONARY FILE UPDATES: 22 FEB 2007 HIGHEST RN 922800-14-4

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TSCA INFORMATION NOW CURRENT THROUGH June 30, 2006

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REGISTRY includes numerically searchable data for experimental and predicted properties as well as tags indicating availability of experimental property data in the original document. For information on property searching in REGISTRY, refer to:

http://www.cas.org/ONLINE/UG/regprops.html

=>

Uploading C:\Program Files\Stnexp\Queries\10527062ss1.str

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chain nodes :
6 7 8 9 10 11 13 19 20 21 22 23 24 26 27
ring nodes :
1 2 3 4 5 12 14 15
                        16 17 18
chain bonds :
2-6 3-22 6-7 6-13 7-8 8-9 9-10 9-19 10-11 11-12 19-20 19-21 22-23
22-24 23-26 26-27
ring bonds :
1-2 1-5 2-3 3-4 4-5 12-14 12-18 14-15 15-16 16-17 17-18
exact/norm bonds :
1-2 2-3 2-6 6-13 7-8 8-9 22-23 22-24 23-26 26-27
exact bonds :
1-5 3-4 3-22 4-5 6-7 9-10 9-19 10-11 11-12
normalized bonds :
12-14 12-18 14-15 15-16 16-17 17-18 19-20 19-21
isolated ring systems :
containing 1 : 12 :
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Match level :

L1

1:Atom 2:Atom 3:Atom 4:Atom 5:Atom 6:CLASS 7:CLASS 8:CLASS 9:CLASS 10:CLASS 11:CLASS 12:Atom 13:CLASS 14:Atom 15:Atom 16:Atom 17:Atom 18:Atom 19:CLASS 20:CLASS 21:CLASS 22:CLASS 23:CLASS 24:CLASS 26:CLASS 27:CLASS

STRUCTURE UPLOADED

=> d ll L1 HAS NO ANSWERS L1 STR

Structure attributes must be viewed using STN Express query preparation.

=> s 11

SAMPLE SEARCH INITIATED 16:12:36 FILE 'REGISTRY'

SAMPLE SCREEN SEARCH COMPLETED - 142 TO ITERATE

100.0% PROCESSED 142 ITERATIONS 0 ANSWERS

SEARCH TIME: 00.00.01

FULL FILE PROJECTIONS: ONLINE **COMPLETE**

BATCH **COMPLETE**

PROJECTED ITERATIONS: 2126 TO 3554

PROJECTED ANSWERS: 0 TO

L2 0 SEA SSS SAM L1

=> s 11 full

FULL SEARCH INITIATED 16:12:40 FILE 'REGISTRY'

FULL SCREEN SEARCH COMPLETED - 2947 TO ITERATE

100.0% PROCESSED 2947 ITERATIONS 18 ANSWERS

SEARCH TIME: 00.00.01

L3 18 SEA SSS FUL L1

=> fil hcaplus

COST IN U.S. DOLLARS SINCE FILE TOTAL ENTRY SESSION

FULL ESTIMATED COST 172.10 172.31

FILE 'HCAPLUS' ENTERED AT 16:12:46 ON 23 FEB 2007 USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.

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FILE COVERS 1907 - 23 Feb 2007 VOL 146 ISS 10 FILE LAST UPDATED: 22 Feb 2007 (20070222/ED)

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This file contains CAS Registry Numbers for easy and accurate substance identification.

=> s 13 L4 2 L3

=> d ed ibib abs hitstr 1-2

L4 ANSWER 1 OF 2 HCAPLUS COPYRIGHT 2007 ACS on STN

ED Entered STN: 23 Dec 2004
ACCESSION NUMBER: 142:79913
TITLE: Enalapril-nitroxy derivatives and related compounds as ace inhibitors for the treatment of cardiovascular diseases

INVENTOR(S): Almirante, Nicoletta; Ongini, Ennio; Del Soldato, Piero
Nicox S. A., Fr.
SOURCE: Nicox S. A., Fr.
COUNCENT TYPE: PIXXD2
DOCUMENT TYPE: PARTLY ACC. NUM. COUNT: 1

English
FAMILY ACC. NUM. COUNT: 1

PAT	ENT	NO.			KIN	0	DATE			APPL	ICAT	ION	NO.		D	ATE	
	2004	1104	32		A1	•	2004	1223	,	wn 2	004-	RP51	089		2	0040	611
•0	2004	AF	ac.	AT.	AM.	AT.	AII.	AZ.	BA.	BB.	BG.	BR.	BW.	BY,	BZ,	CA,	CH,
	•	CN,	m,	CB,	mi.	CZ.	DE.	nK.	DM.	DZ.	EC,	EE.	EG.	ES,	FI.	GB,	GD,
		GF.	GH,	CH,	HR.	Hil.	ID.	TI.	IN.	15.	JP,	KE.	KG,	KP.	KR,	KZ,	LC,
		L.K	1.0	1.5	LT.	111.	LV.	MA.	MD.	MG.	MK,	MN.	HV.	HX.	MZ.	NA,	NI,
		MC.	117	ω, α	DC.	PH .	DI.	PT.	BO.	וום	SC,	SD.	SE.	SG.	SX.	SL.	SY.
		T.I	TW.	TN.	TD.	TT,	77	112	IIG.	115	UZ,	VC.	VN.	YU.	ZA.	ZM.	ZW
	nt.r.	DU,	cu,	CM.	vv.	15	MU.	W7	NA.	Sn.	SL,	SZ.	TZ.	UG.	234.	zv.	AH.
	Ne:	22	BV.	VC.	νσ,	MD.	DII	T.I	TH.	AT,	BE,	BG.	CH.	CY.	CZ.	DE.	DK.
		CC,	PC.	NJ,	T.,	GB.	GD,	HTI.	IE.	17	LU,	MC.	NL.	PL.	PT.	RO.	SE.
		ee,	EJ,	**	DP.	8.1	CF.	cc,	CT.	ON.	GA,	GN.	GO.	GV.	ML.	MR.	NE.
		CN	TD	TC.													
	2004 2529	2460	,,,	10	3.1		2004	1223		MII 2	004-	24 6B	21		2	0040	611
AU	2004	2900.			21		2004	1227		CA 2	004-	2529	478		2	0040	611
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	2004	IE,	51,	rı,	ĸ,	CI,	2006	DU,	Ç2,	, 	004-	1143	n		,	0040	611
BR	2004	0114	30		•		2006	0725		ON 2	004-	8001	71 <i>77</i>		5	0040	611
CN	1809	345	••		٠.		2000	0120		UN Z	004-	0001	112,		,	nnan	617
US	1809 2005 2006	0041	00		Ϋ́		2005	0100	•	US 2	004-	2620	30		5	ስስፋስ	118
NO	2006 APP	0002	PR		^		2006	0312		NO 2	003-	200 1017	06			nnan	619

PRIORITY APPLN. INFO.: EP 2003-101796 A 20030619
OTHER SOURCE(S): MARRAT 142:79913
AB Disclosure is compds. with a general formula of A-(X1-ONO2)5, wherein A is a known ACE-inhibitor such as enalapril and X1 is a spacer such as a (C1-C6)-alkylene. The compds. can be used as ACE-inhibitors for the treatment of cardiovascular and renal diseases and inflammatory processes. The compds. have an improved pharmacol. activity when compared with the structurally closest related prior art compound for example, synthesized N-[(15)-1-ethoxycarbonyl-3-phenylpropyl]-L-alanyl-L-proline 3-nitrooxypropyl ester hydrogen maleate was found to have good vasorelaxation property.

IN 811787-07-2 811787-09-4 811787-19-6
811787-2-2 811787-25-4 811787-27-6
811787-31-2 811787-33-4 811787-35-6
811787-31-9

ANSWER 1 OF 2 HCAPLUS COPYRIGHT 2007 ACS on STN (Continued)

PAGE 1-A

PAGE 1-B

_ NO2

811787-15-2 HCAPLUS
L-Proline, N2-{(15)-1-carboxy-3-phenylpropyl]-N6[((nitrooxy)pethoxy)carbonyl]-L-lysyl-, 2-[3-(nitrooxy)propyl] ester (9CI)
(CA INDEX NAME)

Absolute stereochemistry

811787-17-4 HCAPLUS L-Proline, N2-[(1S)-1-carboxy-3-phenylpropyl]-N6-[(initrooxy)methoxy]carbonyl]-L-lysyl-, 2-[4-(nitrooxy)butyl) ester (9CI) (CA INDEX NAME)

Absolute stereochemistry.

ANSWER 1 OF 2 HCAPLUS COPYRIGHT 2007 ACS on STN (Continued)
RL: THU (Therapeutic use): BIOL (Biological study): USES (Uses)
(enslapril-nitroxy derivs. and related compd. as ACE inhibitors for the
treatment of cardiovascular and renal diseases)
811787-07-2 RCAPLUS
L-Proline, N2-[(1S)-1-carboxy-3-phenylpropyl]-N6-[[4(nitrooxy)butoxy]carbonyl]-L-lysyl-, 2-[3-(nitrooxy)propyl] ester (9CI)
(CA INDEX NAME)

Absolute stereochemistry.

811787-09-4 HCAPLUS
L-Proline, N2-{[15]-1-carboxy-3-phenylpropyl]-N6-[[4-(nitrooxy)butoxy]carbonyl}-L-lysyl-, 2-[4-(nitrooxy)butyl] ester (9CI) (CA INDEX NAME)

Absolute stereochemistry.

811787-13-0 HCAPLUS
L-Proline, N2-{[15]-1-carboxy-3-phenylpropyl]-N6-[[4(nitrooxy)butoxy]carbonyl]-L-lysyl-, 2-{2-[2-(nitrooxy)ethoxy]ethyl] ester
(9CI) (CA INDEX NAME)

ANSWER 1 OF 2 HCAPLUS COPYRIGHT 2007 ACS on STN (Continued)

811787-19-6 HCAPLUS
L-Proline, N2-{(15)-1-carboxy-3-phenylpropyl}-N6[(nitrooxy)methoxy]carbonyl]-L-lysyl-, 2-{2-{(nitrooxy)ethoxy}ethyl}
ester (9CI) (CA INDEX NAME)

Absolute stereochemistry.

811787-23-2 HCAPLUS
L-Prolline, N2-{(15)-1-carboxy-3-phenylpropyl]-N6-{(1(nitrooxy)ethoxy)carbonyl]-L-lysyl-, 2-{3-(nitrooxy)propyl] ester (9CI)
(CA INDEX NAME)

Absolute stereochemistry.

811787-25-4 HCAPLUS L-Proline, N2-{(15)-1-carboxy-3-phenylpropyl]-N6-{(1-(nitrooxy)ethoxy)carbonyl}-L-lysyl-, 2-{4-(nitrooxy)butyl] ester (9CI) (CA INDEX RAME)

Absolute stereochemistry.

L4 ANSWER 1 OF 2 HCAPLUS COPYRIGHT 2007 ACS on STN

(Continued)

811787-27-6 HCAPLUS
L-Proline, N2-[(15)-1-carboxy-3-phenylpropyl]-N6-[[1-(nitrooxy)ethoxy]carbonyl]-L-lysyl-, 2-[2-(nitrooxy)ethoxy]ethyl] ester (9CI) (CA INDEX NAME)

Absolute stereochemistry.

811787-31-2 HCAPLUS L-Proline, N-[(15)-1-carboxy-3-phenylpropyl]-L-alanyl-, 2-[3-(nitrooxy)propyl] ester (9CI) (CA INDEX NAME)

Absolute stereochemistry.

811787-33-4 HCAPLUS L-Proline, N-{(1S)-1-carboxy-3-phenylpropyl]-L-alanyl-, 2-[4-(nitrooxy)butyl] ester (9CI) (CA INDEX NAME)

ANSWER 1 OF 2 HCAPLUS COPYRIGHT 2007 ACS on STN (Continued) L4 ANSWER 1 OF 2 HCAPLUS COPYRIGHT 2007 ACS on STN (Continued) Absolute stereochemistry.

811787-35-6 HCAPLUS L-Proline, N-[(15)-1-carboxy-3-phenylpropyl]-L-alanyl-, 2-[5-(nitrooxy)pentyl] ester (9CI) (CA INDEX NAME)

Absolute stereochemistry.

811787-38-9 HCAPLUS L-Proline, N-[(1S)-1-carboxy-3-phenylpropyl]-L-alanyl-, 2-[2-[2-(nitrooxy)ethoxy]ethyl] ester (9CI) (CA INDEX NAME)

Absolute stereochemistry.

REFERENCE COUNT:

THERE ARE 1 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT 1

L4 ANSWER 2 OF 2 HCAPLUS COPYRIGHT 2007 ACS on STN
ED Entered STN: 26 Mar 2004
ACCESSION NUMBER: 2004:252532 HCAPLUS
COCUMENT NUMBER: 140:276202
Proline seters and preparations containing the same for percutaneous administration
Furuish, Takayuki; Minami, Kunihiro; Minowa, Takayuki; Komine, Mihor Kimura, Kunihiko
Toseiyo Ltd., Japan
PCT Int. Appl., 38 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: PAHLLY ACC. NUM. COUNT: 1

FAMILY ACC. NUM. COUNT: PATENT INFORMATION:

PATENT								APPL	ICAT	ION	NO.		Đ	ATE	
WO 2004													2	0030	908
WU 2004	AE, A		***	2.7	114	17	RA.	RR	BG.	RR	BY.	BZ.	CA.	CH.	CN
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	ω, ι	CR, CU	, C2,	UE,	DK.	un,	04,	<u></u> ,	LL.	EG,	53,	¥1,	W7	35,	11
	GH, G	M, ER	, но.	ID,	1 L,	IN,	15,	JP,	Æ,	NG,	KP,	Mr.	K4,	uc,	
	LR, I	LS, LT	, Lu,	LV,	MA,	MD,	MG.	MK,	MN,	MW,	MA,	MZ,	NI,	NO,	NZ
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	TN, T	TR, TT	, TZ,	UA,	UG,	US,	UZ,	VC.	VN,	Yυ,	ZA,	ZM,	ZW		
RW:	GH, G	GM. KE	. LS.	MW,	MZ,	SD,	SL,	SZ,	TZ,	UG,	ZM,	ZW,	AM,	λZ,	Bì
	KG. F	KZ. MC	. RU,	TJ,	TM,	AT,	BE,	BG,	CH,	CY,	CZ,	DE,	DK,	EE,	E
	FI. F	FR, GE	. GR.	HU.	IE.	IT.	LU.	MC.	NL,	PT,	RO,	SE,	SI,	SK,	73
	BF. F	BJ, CF	CG.	CI.	CM.	GA.	GN.	GO.	GW.	ML,	MR,	NE,	SN,	TD,	T
CA 2498	257		, J.,		2004	0325		CA 2	003-	2498	757		2	0030	908
AU 2003	261090	۵	21		2004	0430		AU 2	003-	2619	89		2	0030	908
EP 1538	150	,	81		2005	0608		FP 2	-500	7953	07		2	0030	908
EF 1330	AT, E	n		nΨ	FC	ED.	GB	~ a	TT	7.7	T.II.	NT.	SE.	MC.	P1
K;	A1, 1	5I, LI	, DE,	DA,	, 63,	ER,	CV.	31	70	BC ,	~	WW.	HD1	SY.	•
	18, 5	SI, LI	, LV.	rı,	, ,,,	1012	C1.	<u>~ь,</u>	17,	0214	20	,	,	0030	ans
CN 1681	839		A		2005	1012	لسر	CH-2	W 3 ~	8214	*		-	0030	300
CN 1681 US 2005 ORITY API	288232	2	A1		2005	1229	_	يحلا	005-	52/0	ريو			0050	30
ORITY API	LN. IN	NFO.:						JP 2	002~	2652	76		A 2	0020	91
								WO 2	003-	JP11	420		₩ 2	0030	901
HER SOURCE	(S):		MAR	PAT	140:	2762	02								

R SOURCE(5): MARPAT 140:276502

-[N-[(15)-1-carbowy-3-phenylpropyl]-L-alanyl]-L-proline esters or pharmaceutically acceptable salts thereof are useful as a prodrug for enalaprilat, which is a medicine useful in the prevention of and treatments for, e.g. circulatory diseases such as hypertension, cardiac diseases (cardiac hypertrophy, cardiac failure, myocardial infarct, etc.), nephritis, and apopleay. A medicine containing either of these is suitable for use as a preparation for percutaneous administration, especially an

for use as a preparation for percutaneous administration, especially enablesive patch, from the standpoints of medicinal activity and use. For example, a composition was formulated containing

1-[N-[(1S)-1-carboxy-3-phenylpropyl]-Lalanyl]-L-proline 2-hydroxysthyl ester (preparation given), iso-Pr

myristate,
lauromaccogol, Quintac 1421, Quintone M100, and paraffin oils and spread on a PET file to give an adhesive patch.

674285-96-2P 674285-00-1P

674285-99-5P 674285-00-1P

RL: SPN (Synthetic preparation), TEU (Therapeutic use), BIOL (Biological study), PREP (Preparation) USES (Uses)

(preparation of proline esters as prodrugs for enalaprilat for percutaneous (prop-percutaneous administration)

ANSWER 2 OF 2 HCAPLUS COPYRIGHT 2007 ACS on STN (Continued) 674285-96-2 HCAPLUS L-Proline, N-[(1S)-1-carboxy-3-phenylpropyl]-L-alanyl-, 2-(2-hydroxyethyl) estec (9C1) (CA INDEX NAME)

Absolute stereochemistry.

674285-97-3 HCAPLUS L-Proline, N-[(15)-1-carboxy-3-phenylpropyl]-L-alanyl-, 2-(3-hydroxypropyl) ester (9CI) (CA INDEX NAME)

Absolute stereochemistry.

674285-98-4 HCAPLUS L-Proline, N-[(15)-1-carboxy-3-phenylpropyl]-L-alanyl-, 2-(4-hydroxybutyl) ester (9C1) (CA INDEX NAME)

Absolute stereochemistry.

L4 ANSWER 2 OF 2 HCAPLUS COPYRIGHT 2007 ACS on STN

674285-99-5 HCAPLUS L-Proline, N-[[15]-1-carboxy-3-phenylpropyl]-L-alanyl-, 2-[2-(2-methoxyethoxy)ethyl] ester (9CI) (CA INDEX NAME)

Absolute stereochemistry.

674286-00-1 HCAPLUS L-Proline, N-[(IS)-1-carboxy-3-phenylpropyl]-L-alamyl-, 2-(2-methoxyethyl) ester (9C1) (CA INDEX NAME)

Absolute stereochemistry.

REFERENCE COUNT:

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=> s enalaprilat
           980 ENALAPRILAT
=> s 15 and prol
=> s 15 and prol?
        559583 PROL?
            92 L5 AND PROL?
L6
\Rightarrow s 15 and 13
             2 L3
             1 L5 AND L3
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E1
             2
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         54883
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E4
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                    ED01/BI
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                    ED036/BI
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                    ED041/BI
E12
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^{=&}gt; d ed ibib abs hitstr L7

LANGUAGE: FAMILY ACC. NUM. COUNT: PATENT INFORMATION:

PATENT NO.	KIND DATE	APPLICATION NO.	DATE
WO 2004024754	A1 20040325	₩O 2003-JP11420	20030908
W: AE, AG, AL,	AM, AT, AU, AZ,	BA, BB, BG, BR, BY, I	B2, CA, CH, CN,
CO, CR, CU,	CZ, DE, DX, DM,	D2, EC, EE, EG, ES, I	FI, GB, GD, GE,
GH. GM. HR.	HU. ID. IL. IN.	IS, JP, KE, KG, KP, I	KR, KZ, LC, LK,
LR. LS. LT.	LU. LV. MA, MD,	MG, MK, MN, MW, MX, F	M2, NI, NO, N2,
OM. PG. PH.	PL. PT. RO. RU.	SC, SD, SE, SG, SK,	SL, SY, TJ, TM,
TN. TR. TT.	TZ. UA. UG. US.	UZ, VC, VN; YU, ZA;	ZM, ZW
DW GH GM KTE.	I.S. MV. MZ. SD.	SL, SZ, TZ, UG, ZM,	ZW. AM. AZ. BY.
KG KZ MD.	BU. TJ. TM. AT.	BE, BG, CH, CY, C2,	DE, DK, EE, ES,
WI WE GE	GP HI IF IT.	LU, MC, NL, PT, RO,	SE. SI. SK. TR.
11, 11, CB,	CG CI CM GA	GN, GQ, GW, ML, MR, I	NE. SN. TD. TG
C3 2400757	A1 20040325	CA 2003-2498757	20030908
CA 2450131	31 20040430	AU 2003-261989	20030908
MD 2003261989	31 20040430	EP 2003-795307	20030908
FL 1238128	A1 20030000	GB, GR, IT, LI, LU, I	NI SE MC PT.
R: AT, BE, CH,	UE, UK, ES, FK,	CB, GR, 11, DI, DO, 1	PP UII CV
IE, SI, LT,	LV, F1, RU, MK,	CY, AL, TR, BG, CZ, 1	2002000
CN 1681839	A 20051012	CN 2003-821438	20030308
		US 2005-527062	20050309
PRIORITY APPLN. INFO.:		JP 2002-265276	
		WO 2003-JP11420	₩ 20030908

PRIORITY APPLN. INFO.:

JP 2002-255276 A 20020918

OTHER SOURCE(S): MARPAT 140:276202

AB 1-[N-[(1S)-1-carboxy-3-phenylpropyl]-L-alanyl]-L-proline esters or pharmaceutically acceptable salts thereof are useful as a prodrug for enalaprilat, which is a medicine useful in the prevention of and treatments for, e.g., circulatory diseases such as hypertension, cardiac diseases (cardiac hypertrophy, cardiac failure, myocardial infarct, etc.), nephritis, and apoplexy. A medicine containing either of these is suitable for use as a preparation for percutaneous administration, especially an adhesive patch, from the standpoints of medicinal activity and use. For example, a composition was formulated containing

1-[N-[(1S)-1-carboxy-3-phenylpropyl]-L-alanyl]-L-proline 2-hydroxythyl ester (preparation given), iso-Pr myristate,

lauromacrogol, Quintac 3421, Quintone M100, and paraffin oils and spread on a PET film to give an adhesive patch.

16 61285-96-26 74285-97-39 674285-98-49 674285-99-49 674285-99-59 674285-00-1P RL: SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological

ANSWER 1 OF 1 HCAPLUS COPYRIGHT 2007 ACS on STN (Continued)

674285-99-5 HCAPLUS L-Proline, N-[(15)-1-carboxy-3-phenylpropyl]-L-alanyl-, 2-[2-(2-methoxyethoxy)ethyl] ester (9CI) (CA INDEX NAME)

Absolute stereochemistry.

674286-00-1 HCAPLUS L-Proline, N-([15)-1-carboxy-3-phenylpropyl]-L-alanyl-, 2-(2-methoxyethyl) ester (9C1) (CA INDEX NAME)

Absolute stereochemistry.

REFERENCE COUNT:

THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

ANSYER 1 OF 1 ECAPLUS COPYRIGHT 2007 ACS on STN (Continued) study); PREP (Preparation); USES (Uses) (preph. of proline esters as prodrugs for enalaprilat for percutaneous administration) 674285-96-2 ECAPLUS L-Proline, N-[(1S)-1-carboxy-3-phenylpropyl]-L-alanyl-, 2-(2-hydroxyethyl) ester (9CI) (CA INDEX NAME) L7

Absolute stereochemistry.

674285-97-3 HCAPLUS L-Proline, N-[(15)-1-carboxy-3-phenylpropyl]-L-alanyl-, 2-(3-hydroxypropyl) ester (9CI) (CA INDEX NAME)

Absolute stereochemistry.

674285-98-4 HCAPLUS L-Proline, N-((IS)-1-carboxy-3-phenylpropyl)-L-alanyl-, 2-(4-hydroxybutyl) ester (9C1) (CA INDEX NAME)

Absolute stereochemistry.

=> log y COST IN U.S. DOLLARS	SINCE FILE ENTRY	TOTAL SESSION
FULL ESTIMATED COST	28.81	201.12
DISCOUNT AMOUNTS (FOR QUALIFYING ACCOUNTS)	SINCE FILE ENTRY	TOTAL SESSION
CA SUBSCRIBER PRICE	-2.34	-2.34

STN INTERNATIONAL LOGOFF AT 16:15:31 ON 23 FEB 2007

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Welcome to STN International! Enter x:x
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LOGINID: SSPTANAG1626

PASSWORD:

TERMINAL (ENTER 1, 2, 3, OR ?):2

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                    Welcome to STN International
                Web Page URLs for STN Seminar Schedule - N. America
NEWS 1
                "Ask CAS" for self-help around the clock
NEWS 2
NEWS 3 OCT 23
                The Derwent World Patents Index suite of databases on STN
                has been enhanced and reloaded
NEWS
        OCT 30 CHEMLIST enhanced with new search and display field
NEWS 5 NOV 03
                JAPIO enhanced with IPC 8 features and functionality
NEWS 6 NOV 10
                CA/CAplus F-Term thesaurus enhanced
        NOV 10
                STN Express with Discover! free maintenance release Version
NEWS
                8.01c now available
        NOV 20
                CA/CAplus to MARPAT accession number crossover limit increased
NEWS 8
                to 50,000
NEWS 9 DEC 01
                CAS REGISTRY updated with new ambiguity codes
        DEC 11
NEWS 10
                CAS REGISTRY chemical nomenclature enhanced
        DEC 14
NEWS 11
                WPIDS/WPINDEX/WPIX manual codes updated
NEWS 12 DEC 14
                GBFULL and FRFULL enhanced with IPC 8 features and
                functionality
NEWS 13 DEC 18
                CA/CAplus pre-1967 chemical substance index entries enhanced
                with preparation role
NEWS 14 DEC 18
                CA/CAplus patent kind codes updated
NEWS 15 DEC 18
                MARPAT to CA/CAplus accession number crossover limit increased
                to 50,000
NEWS 16 DEC 18 MEDLINE updated in preparation for 2007 reload
NEWS 17 DEC 27 CA/CAplus enhanced with more pre-1907 records
NEWS 18 JAN 08 CHEMLIST enhanced with New Zealand Inventory of Chemicals
NEWS 19 JAN 16 CA/CAplus Company Name Thesaurus enhanced and reloaded
NEWS 20 JAN 16 IPC version 2007.01 thesaurus available on STN
NEWS 21 JAN 16 WPIDS/WPINDEX/WPIX enhanced with IPC 8 reclassification data
NEWS 22 JAN 22 CA/CAplus updated with revised CAS roles
NEWS 23 JAN 22 CA/Caplus enhanced with patent applications from India
NEWS 24 JAN 29
                PHAR reloaded with new search and display fields
NEWS 25 JAN 29 CAS Registry Number crossover limit increased to 300,000 in
                multiple databases
NEWS EXPRESS NOVEMBER 10 CURRENT WINDOWS VERSION IS V8.01c, CURRENT
             MACINTOSH VERSION IS V6.0c(ENG) AND V6.0Jc(JP),
             AND CURRENT DISCOVER FILE IS DATED 25 SEPTEMBER 2006.
             STN Operating Hours Plus Help Desk Availability
NEWS HOURS
NEWS LOGIN
             Welcome Banner and News Items
NEWS IPC8
             For general information regarding STN implementation of IPC 8
NEWS X25
             X.25 communication option no longer available
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FILE 'HOME' ENTERED AT 08:16:30 ON 09 FEB 2007

=> fil reg
COST IN U.S. DOLLARS

SINCE FILE TOTAL ENTRY SESSION 0.21 0.21

FULL ESTIMATED COST

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STRUCTURE FILE UPDATES: 7 FEB 2007 HIGHEST RN 919834-45-0 DICTIONARY FILE UPDATES: 7 FEB 2007 HIGHEST RN 919834-45-0

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TSCA INFORMATION NOW CURRENT THROUGH June 30, 2006

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http://www.cas.org/ONLINE/UG/regprops.html

=>

Uploading C:\Program Files\Stnexp\Queries\10527062.str

chain nodes :

6 7 8 9 10 11 13 19 20 21 22 23 24

ring nodes :

1 2 3 4 5 12 14 15 16 17 18

chain bonds :

 $2-6 \quad 3-22 \quad 6-7 \quad 6-13 \quad 7-8 \quad 8-9 \quad 9-10 \quad 9-19 \quad 10-11 \quad 11-12 \quad 19-20 \quad 19-21 \quad 22-23$

22-24

ring bonds :

1-2 1-5 2-3 3-4 4-5 12-14 12-18 14-15 15-16 16-17 17-18

exact/norm bonds :

1-2 2-3 2-6 6-13 7-8 8-9 22-23 22-24

exact bonds :

1-5 3-4 3-22 4-5 6-7 9-10 9-19 10-11 11-12

normalized bonds :

12-14 12-18 14-15 15-16 16-17 17-18 19-20 19-21

isolated ring systems : containing 1 : 12 :

Match level:

1:Atom 2:Atom 3:Atom 4:Atom 5:Atom 6:CLASS 7:CLASS 8:CLASS 9:CLASS

10:CLASS 11:CLASS 12:Atom 13:CLASS 14:Atom 15:Atom 16:Atom 17:Atom 18:Atom

19:CLASS 20:CLASS 21:CLASS 22:CLASS 23:CLASS 24:CLASS

STRUCTURE UPLOADED

STR

=> d 11

L1 HAS NO ANSWERS

L1

Structure attributes must be viewed using STN Express query preparation.

=> s 11

SAMPLE SEARCH INITIATED 08:17:02 FILE 'REGISTRY' SAMPLE SCREEN SEARCH COMPLETED - 142 TO ITERATE

142 ITERATIONS 100.0% PROCESSED

14 ANSWERS

SEARCH TIME: 00.00.01

FULL FILE PROJECTIONS: ONLINE **COMPLETE**

BATCH **COMPLETE**

PROJECTED ITERATIONS: 2126 TO 3554 56 TO 504 PROJECTED ANSWERS:

L2

14 SEA SSS SAM L1

=> s 11 full

FULL SEARCH INITIATED 08:17:06 FILE 'REGISTRY'
FULL SCREEN SEARCH COMPLETED - 2944 TO ITERATE

100.0% PROCESSED 2944 ITERATIONS

311 ANSWERS

TOTAL

SEARCH TIME: 00.00.01

L3 311 SEA SSS FUL L1

=> fil hcaplus

COST IN U.S. DOLLARS SINCE FILE

FULL ESTIMATED COST ENTRY SESSION 172.10 172.31

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FILE COVERS 1907 - 9 Feb 2007 VOL 146 ISS 8 FILE LAST UPDATED: 8 Feb 2007 (20070208/ED)

New CAS Information Use Policies, enter HELP USAGETERMS for details.

This file contains CAS Registry Numbers for easy and accurate substance identification.

=> s 13

L4 2253 L3

=> fil req

COST IN U.S. DOLLARS SINCE FILE TOTAL ENTRY SESSION

FULL ESTIMATED COST 5.20 177.51

FILE 'REGISTRY' ENTERED AT 08:18:20 ON 09 FEB 2007
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TSCA INFORMATION NOW CURRENT THROUGH June 30, 2006

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REGISTRY includes numerically searchable data for experimental and predicted properties as well as tags indicating availability of experimental property data in the original document. For information on property searching in REGISTRY, refer to:

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=>

Uploading C:\Program Files\Stnexp\Queries\10527062s1.str

chain nodes : 6 7 8 9 10 11 13 19 20 21 22 23 24 26 27 28 29 30 31 ring nodes : 1 2 3 4 5 12 14 15 16 17 18 chain bonds : 2-6 3-22 6-7 6-13 7-8 7-31 7-32 8-9 9-10 9-19 9-30 10-11 10-28 10-29 11-12 11-26 11-27 19-20 19-21 22-23 22-24 23-33 ring bonds : 1-2 1-5 2-3 3-4 4-5 12-14 12-18 14-15 15-16 16-17 17-18 exact/norm bonds : 1-2 2-3 2-6 6-13 7-8 8-9 22-23 22-24 23-33 exact bonds : $1-5 \quad 3-4 \quad 3-22 \quad 4-5 \quad 6-7 \quad 7-31 \quad 7-32 \quad 9-10 \quad 9-19 \quad 9-30 \quad 10-11 \quad 10-28 \quad 10-29 \quad 11-12$ 11-26 11-27 normalized bonds : 12-14 12-18 14-15 15-16 16-17 17-18 19-20 19-21 isolated ring systems : containing 1 : 12 :

Match level:

1:Atom 2:Atom 3:Atom 4:Atom 5:Atom 6:CLASS 7:CLASS 8:CLASS 9:CLASS 10:CLASS 11:CLASS 12:Atom 13:CLASS 14:Atom 15:Atom 16:Atom 17:Atom 18:Atom 19:CLASS 20:CLASS 21:CLASS 22:CLASS 23:CLASS 24:CLASS 26:CLASS 27:CLASS 28:CLASS 29:CLASS 30:CLASS 31:CLASS 32:CLASS 33:CLASS

=> d 15 L5 HAS NO ANSWERS L5 STR

Structure attributes must be viewed using STN Express query preparation.

=> s 15

SAMPLE SEARCH INITIATED 08:19:56 FILE 'REGISTRY'
SAMPLE SCREEN SEARCH COMPLETED - 142 TO ITERATE

100.0% PROCESSED 142 ITERATIONS 1 ANSWERS

SEARCH TIME: 00.00.01

FULL FILE PROJECTIONS: ONLINE **COMPLETE**
BATCH **COMPLETE**

PROJECTED ITERATIONS: 2126 TO 3554

PROJECTED ANSWERS: 2126 TO 3334
PROJECTED ANSWERS: 1 TO 80

L6 1 SEA SSS SAM L5

=> s 15 full FULL SEARCH INITIATED 08:20:00 FILE 'REGISTRY' FULL SCREEN SEARCH COMPLETED - 2944 TO ITERATE

100.0% PROCESSED 2944 ITERATIONS 37 ANSWERS

SEARCH TIME: 00.00.01

L7 37 SEA SSS FUL L5

=> fil hcaplus

COST IN U.S. DOLLARS
SINCE FILE TOTAL
ENTRY SESSION
FULL ESTIMATED COST 173.00 350.51

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This file contains CAS Registry Numbers for easy and accurate substance identification.

=> s 17 L8 10 L7

=> d ibib ed abs hitstr 1-10

```
L8 ANSWER 1 OF 10
ACCESSION NUMBER:
DOCUMENT NUMBER:
ITILE:
INVENTOR(S):
PATENT ASSIGNEE(S):
SOURCE:
DOCUMENT TYPE:

DEADLY TO THE TOP TO THE TOP THE 
     DOCUMENT TYPE:
LANGUAGE:
                                                                                                                                                                                                                                                                                Patent
English
3
     FAMILY ACC. NUM. COUNT:
PATENT INFORMATION:
                                                                                                                                                                                                                           PATENT NO.
                                                          US 2006241017
WO 2005046575
WO 200504575

W: AE, AG, AI
CN. CO, CI
GE, GH, GH
LK, LR, LS
NO, NZ, OZ
TJ, TM, TT
RW: BW, GH, GR
AZ, BY, KX
EE, ES, FI
SI, SK, TI
SI, SK, TI
US 2006287244
PRIORITY APPLN. INFO.:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             US 2006-442027
US 2003-491331P
WO 2004-US24901
US 2006-343557
                                                                                                                                                                                                                                                                                                                                                            20061221
                                                                                                                                                                                                                                                                                        Al
                                                  WO 2004-USZ4901 A2 20040729
US 2006-343557 A2 200060130
The invention is directed to novel therapeutic compds. comprised of an amino acid bonded to a medicament or drug having a hydroxy, amino, carboxy or acylating function. These high-therapeutic index derive, have the same utility as the drug from which they are made and they have enhanced pharmacol. and pharmacoutical properties. The examples describe the synthesis and activities of amino acid derivs. of propofol, buprofon, ketoprofon, ketoprofon, aspirin, acetaminophen, cyclosporin A, valproic acid, clopidogrel, damazol, benzapril, enalapril, and fenofibric acid. Thus, (1)-ibuprofon esters of L-serine, L-threonine, and L-hydroxyproline were prepared and examined for analgesic, gastric mucosal irritation, toxicity, and pharmacokinetic properties. G74796-29-3P
RL: RCT (Reactant): SPN (Synthetic preparation): PREF (Preparation): RACT (Reactant or reagent)
(preparation of amino acid derivs. with high therapeutic index)
G74796-29-3 HCAPLUS
L-Proline, N-(15)-1-carboxy-3-phenylpropyl)-L-alanyl-,
2-(1,1-dimethylethyl) ester (9CI) (CA INDEX NAME)
```

Absolute stereochemistry.

```
L8 ANSWER 2 OF 10 HCAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2005:99521 HCAPLUS
DOCUMENT NUMBER: 142:156329
TITLE: Preparation of q-amino acid benzothiazolylthio esters as intermediates for manufacture of ACE inhibitors
INVENTOR(5): Singh, Girij Palr Godbole, Himanshu Madhav/ Mahajan, Pravin ASSIGNEE(5): Lupin Limited, India Per India Per India Per India Per Int. Appl., 108 pp.
COURS: PKXD2

DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
      FAMILY ACC. NUM. COUNT:
PATENT INFORMATION:
                            TINFORMATION:

PATENT NO. KIND DATE APPLICATION NO. DATE

WO 2005010028 A1 20050203 WO 2003-IN257 20030731

V: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DK, DZ, EZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LK, LS, LT, LU, LV, MA, MD, MG, MX, MN, MW, MX, RX, NI, NO, NZ, OM, PG, PH, PL, PT, NO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TM, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZW, ZW

RW: GB, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DX, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, AG, GN, GQ, GW, ML, MR, NE, SN, TD, TG
AU 2003272077 A1 20030731

RR SOURCE(S): CASREACT 142:1563297 MARPAT 142:1563299

Entered STN: 04 Feb 2005
    AU 2003272077 Al
PRIORITY APPUN. INFO::
OTHER SOURCE(S): CASREA
ED Entered STN: 04 Feb 2005
AB The invention relates to e
                             Entered STN: 04 Feb 2005
The invention relates to esters (5,5)-RCH2CH2CH(CO2RI)NECHR2CO-X (I/R is alkyl or Phy RI H or alkyl R2 is alkyl or point animalkyl; X is 2-benzothiazolylthio) which are intermediates in the manufacture of ACE inhibitors I (X is an amino acid or derivative). The intermediate benzothiazolylthio esters were prepared by reaction of the appropriate acid or acid chloride vith 2,2'-dithiobis(benzothiazole) or 2-
mercaptobenzothiazole. Thus, treatment of N-[I(s)-(ethoxycarbonyl)-3-
phenylpropyl]-N6-(trifluoroacetyl)-L-lysine (preparation given) with 2,2'-dithiobis(benzothiazole), followed by coupling with i-proline Et ester and deprotection, afforded lisinopril dihydrate.
827622-34-4P
RL: RCT (Reactant), SPN (Symbetic preparation).
                                  827622-34-4P
RL: RCT (Reactant): SPN (Synthetic preparation): PREP (Preparation): RACT
(Reactant or reagent)
(preparation of q-amino acid benzothiazolylthio esters as
intermediates for manufacture of ACE inhibitors)
827622-34-4 HCAPLUS
                                 varuaz-se-e nLAFLUS
L-Proline, N2-{(1R)-1-carboxy-3-phenylpropyl}-N6-(trifluoroacetyl)-L-lysyl-
, 2-ethyl ester (9Cl) (CA INDEX NAME)
```

Absolute stereochemistry.

ANSWER 1 OF 10 HCAPLUS COPYRIGHT 2007 ACS on STN

ANSWER 2 OF 10 HCAPLUS COPYRIGHT 2007 ACS on STN (Continued)

REFERENCE COUNT: 2 THERE ARE 2 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L8 ANSWER 3 OF 10 HCAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2004:1124626 HCAPLUS
DOCUMENT NUMBER: 142:79913
TITLE: Enalapril-nitroxy derivatives and related compounds as ace inhibitors for the treatment of cardiovascular diseases
INVENTOR(S): Almirante Nicolatta: Cogini Engic Del Soldato

Almirante, Nicoletta; Ongini, Ennio; Del Soldato, INVENTOR(S):

PATENT ASSIGNEE(S): SOURCE:

Almirante, Michietta, O Piero Nicox S. A., Fr. PCT Int. Appl., 132 pp. CODEN: PIXXD2 Patent English 1

DOCUMENT TYPE: LANGUAGE: FAMILY ACC. NUM. COUNT: PATENT INFORMATION:

PATENT NO. DATE APPLICATION NO. DATE KIND 20040611 BZ, CA, CH, FI, GB, GD, KR, KZ, LC, MZ, NA, NI, SK, SL, SY, ZA, ZM, ZW ZM, ZW, AM, CZ, DE, DK, PT, RO, SE, ML, MR, NE, A1 20041223 AM, AT, AU, AZ, CU, CZ, DE, DX, HR, HU, ID, IL, LT, LU, LV, MA, PG, PH, PL, PT, TR, TT, TZ, UA, KE, LS, MW, MZ, KZ, MD, RU, TJ, FR, GB, GR, HU, BF, BJ, CF, CG, WO 2004110432 A1 A1
W: AE, AG, AL, AM,
CM, CO, CR, CU, GE, GH, GH, HR,
LK, LR, LS, LT,
NO, NZ, CM, PG,
TJ, TM, TN, TR,
RW: BW, GH, GH, KE,
AZ, BY, KG, KZ,
EE, ES, FI, FR,
SI, SK, TR, BT,
AU 2004246921 A1
CA 2529478 A1
R: AT, BE, CH, DE,
IE, SI, FI, RO,
BR 2004011430 C,
RI 2003004100 A1
NO 2006000268 A
RITY APPLM. INFO: WO 2004110432 WO 2004-EP51089 WO 20 BA, BB, DM, DZ, IN, IS, MD, MG, RO, RU, UG, US, NA, SD, TM, AT, IE, IT, CI, CM, BR, BW,
EE, EG,
KE, KG,
MN, MW,
SD, SE,
VC, VN,
SZ, TZ,
BG, CH,
MC, NL,
GN, GQ, BG, EC, JP, HK, SC, UZ, ES, KP, MX, SG, YU, UG, CY, PL, GW, SL, BE, LU, GA, AU 2004-246821 CA 2004-2529478 EP 2004-741779, GR, IT, LI, LU, EE, HU, PL, SK BR 2004-11430 CN 2004-80017127 US 2004-869038 NO 2006-268 EP 2003-101796 WO 2004-EP51089 20041223 20041223 20060322 DK, ES, FR, CY, TR, BG, 20060725 20060726 20050106 20060315 20040611 20040611 20040611 SE, MC, PT, GB, CZ, 20040611 20040611 20040617 20060118 20030619 20040611 PRIORITY APPLN. INFO.:

OTHER SOURCE(S):

ED AB

ANSWER 3 OF 10 HCAPLUS COPYRIGHT 2007 ACS on STN

PAGE 1-B

(Continued)

PAGE 1-A

_ NO2

811787-13-0 HCAPLUS
L-Proline, N2-{[15]-1-carboxy-3-phenylpropyl]-N6-{[4(nitrooxy)butoxy]carbonyl]-L-lysyl-, 2-{2-{2-(nitrooxy)ethoxy]ethyl] ester
(9C1) (CA INDEX NAME)

Absolute stereochemistry.

PAGE 1-A

ANSWER 3 OF 10 HCAPLUS COPYRIGHT 2007 ACS on STN (Continued)
811787-38-9 811787-39-0 .

RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(enalapril-nitroxy derivs. and related compd. as ACE inhibitors for the
treatment of cardiovascular and renal diseases)
811787-07-2 HCAPLUS
L-Proline, N2-{[15]-1-carboxy-3-phenylpropy1]-N6-[[4(nitrooxy)butoxy]carbony1]-L-lysy1-, 2-[3-(nitrooxy)propy1] ester (9CI)
(CA INDEX NAME)

Absolute stereochemistry.

811787-09-4 HCAPLUS L-Proline, N2-[(15)-1-carboxy-3-phenylpropyl]-N6-[(4-(nitrooxy)butoxy]carbonyl]-L-lysyl-, 2-[4-(nitrooxy)butyl] ester (9CI) (CA INDEX NAME)

Absolute stereochemistry.

811787-11-8 HCAPLUS
L-Proline, N2-[(15)-1-carboxy-3-phenylpropyl)-N6-[[4(nitroxy)butoxy]carbonyl]-L-lysyl-, 2-[2-[[2-(nitrooxy)ethyl]thio]ethyl]
ester (9CI) (CA INDEX NAME)

ANSWER 3 OF 10 HCAPLUS COPYRIGHT 2007 ACS on STN

(Continued)

PAGE 1-B

811787-15-2 HCAPLUS
L-Proline, N2-[(15)-1-carboxy-3-phenylpropyl]-N6[((nitrooxy)methoxy]carbonyl]-L-lysyl-, 2-[3-(nitrooxy)propyl] ester (9CI)
(CA INDEX NAME)

Absolute stereochemistry.

811787-17-4 HCAPLUS
L-Proline, N2-{(1\$)-1-carboxy-3-phenylpropyl]-N6[(Initrooxy)methoxy]carbonyl]-L-lysyl-, 2-{4-(nitrooxy)butyl] ester (9CI)
(CA INDEX NAME)

Absolute stereochemistry.

811787-19-6 HCAPLUS
L-Proline, N2-[(15)-1-carboxy-3-phenylpropyl]-N6[((nitrooxy)methoxy]carbonyl]-L-lysyl-, 2-[2-(nitrooxy)ethoxy]ethyl]
ester (9CI) (CA INDEX NAME)

Absolute stereochemistry.

ANSWER 3 OF 10 HCAPLUS COPYRIGHT 2007 ACS on STN

811787-21-0 HCAPLUS L-Proline, N2-[(15)-1-carboxy-3-phenylpropyl]-N6-[(nitrooxy)methoxy)carbonyl]-L-lysyl-, 2-[2-[(2-(nitrooxy)thyl]thio]ethyl] ester (9CI) (CA INDEX NAME)

Absolute stereochemistry.

811787-23-2 HCAPLUS L-Proline, N2-{[15]-1-carboxy-3-phenylpropyl]-N6-[{1-(nitrooxy)ethoxy)carbonyl]-L-lysyl-, 2-[3-(nitrooxy)propyl] ester (9CI) (CA INDEX NAME)

Absolute stereochemistry.

811787-25-4 HCAPLUS
L-Proline, N2-[(15)-1-carboxy-3-phenylpropyl]-N6-[[1(nitrooxy)ethoxy]carbonyl]-L-lysyl-, 2-[4-(nitrooxy)butyl] ester (9CI)

ANSWER 3 OF 10 HCAPLUS COPYRIGHT 2007 ACS on STN

811787-31-2 HCAPLUS L-Proline, N-[(15)-1-carboxy-3-phenylpropyl]-L-alanyl-, 2-[3-(nitrooxy)propyl] ester (9CI) (CA INDEX NAME)

811787-33-4 HCAPLUS L-Proline, N-[(15)-1-carboxy-3-phenylpropyl}-L-alanyl-, 2-[4-(nitrooxy)butyl] ester (9CI) (CA INDEX NAME)

Absolute stereochemistry.

811787-35-6 HCAPLUS L-Proline, N-{{1S}-1-carboxy-3-phenylpropyl}-L-alanyl-, 2-[5-(nitrooxy)pentyl] ester (9CI) (CA INDEX NAME)

Absolute stereochemistry.

811787-38-9 HCAPLUS L-Proline, N-[(1S)-1-carboxy-3-phenylpropyl]-L-alanyl-,

ANSWER 3 OF 10 HCAPLUS COPYRIGHT 2007 ACS on STN (CA INDEX NAME) (Continued)

811787-27-6 HCAPLUS
L-Proline, N2-{(15)-1-carboxy-3-phenylpropyl}-N6-[(1nitrooxy)ethoxy]carboxy]-L-lysyl-, 2-{2-{2-(nitrooxy)ethoxy]ethyl] ester
(9CI) (CA INDEX NAME)

811787-29-8 HCAPLUS
L-Proline, N2-[(15)-1-carboxy-3-phenylpropy1]-N6-[[1(nitrooxy)ethoxy]carbonyl]-L-lysyl-, 2-[2-[[2-(nitrooxy)ethyl]thio]ethyl]
ester (9CI) (CA INDEX NAME)

ANSWER 3 OF 10 HCAPLUS COPYRIGHT 2007 ACS on STN (Continued) 2-[2-[2-(nitrooxy)ethoxy]ethyl] ester (9CI) (CA INDEX NAME)

811787-39-0 HCAPLUS ...
L-Proline, N-[(15)-1-carboxy-3-phenylpropyl]-L-alanyl-,
2-[2-[(2-introoxy)ethyl]thio]ethyl] ester (9CI) (CA INDEX NAME)

Absolute stereochemistry.

REFERENCE COUNT: THERE ARE 1 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L8 ANSWER 4 OF 10 HCAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2004:252532 HCAPLUS
DOCUMENT NUMBER: 140:276202
ITITLE: Proline esters and preparations containing the same for percutaneous administration
FURLISHI, Taksyuki, Minami, Kunihiro; Minowa, Taksyuki, Komine, Miho; Kimura, Kunihiko
Toasiyo Lcd., Japan
PCT Int. Appl., 38 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
Japanese

LANGUAGE: FAMILY ACC. NUM. COUNT: PATENT INFORMATION:

PATENT NO. APPLICATION NO.

OTHER SOURCE(s): MARPAT 140:276202

ED Entered STN: 26 Mar 2004

AB 1-[N-[(13)-1-carboxy-3-phenylpropyl]-L-alanyl]-L-proline esters or pharmaceutically acceptable salts thereof are useful as a prodrug for enalaprilat, which is a medicine useful in the prevention of and treatments for, e.g., circulatory diseases such as hypertension, cardiac diseases (cardiac hypertrophy, cardiac failure, myocardial infarct, etc.), nephritis, and apoplexy. A medicine containing either of these is suitable for use as a preparation for percutaneous administration, especially an adhesive

for use as a preparation for percutaneous auministration, or adhesive patch, from the standpoints of medicinal activity and use. For example, a composition was formulated containing 1-[Ni-[(1S)-1-carboxy-3-phenylpropyl]-L-alanyl]-L-proline 2-hydroxyethyl ester (preparation given), iso-Pr myristate, lauromacrogol, Quintac 3421, Quintone M100, and paraffin oils and spread on a PET film to give an adhesive patch.

11 614796-29-3P, 1-[N-[(1S)-1-Carboxy-3-phenylpropyl]-L-alanyl]-L-proline tert-butyl ester
RL: RCT (Reactant), SPN (Synthatic preparation), PREP (Preparation), RACT

ANSWER 4 OF 10 HCAPLUS COPYRIGHT 2007 ACS on STN (Continued)

674285-98-4 HCAPLUS L-Proline, N-[(15)-1-carboxy-3-phenylpropyl]-L-alanyl-, 2-(4-hydroxybutyl) 'ester (9C1) (CA INDEX NAME)

Absolute stereochemistry.

674285-99-5 HCAPLUS L-Proline, N-[(1S)-1-carboxy-3-phenylpropyl]-L-alanyl-, 2-[2-(2-methoxyethoxy)ethyl] ester (9CI) (CA INDEX NAME)

Absolute stereochemistry.

674286-00-1 HCAPLUS L-Proline, N-[(15)-1-carboxy-3-phenylpropyl]-L-slanyl-, 2-(2-methoxyethyl) estr [9C1] (CA INDEX NAME)

Absolute stereochemistry.

ANSWER 4 OF 10 HCAPLUS COPYRIGHT 2007 ACS on STN (Continued)
(Reactant or reagent)
(prepn. of proline esters as prodrugs for enalaprilat for percutaneous administration)
674796-29-3 HCAPLUS
L-Proline, N-[(1S)-1-carboxy-3-phenylpropyl]-L-alanyl-,
2-(1,1-dimethylethyl) ester (9CI) (CA INDEX NAME)

Absolute stereochemistry.

674285-96-2P 674285-97-3P 674285-98-4P
674285-99-5P 674286-00-1P
RL: SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREF (Preparation); USES (Uses)
(preparation of proline esters as prodrugs for enalaprilat for utaneous administration)
674285-96-2 HCAPLUS
L-Proline, N-[(IS)-1-carboxy-3-phenylpropyl]-L-alanyl-, 2-(2-hydroxyethyl) ester (9CI) (CA INDEX NAME)

Absolute stereochemistry.

674285-97-3 HCAPLUS L-Proline, N-[(1S)-1-carboxy-3-phenylpropyl]-L-alanyl-, 2-(3-hydroxypropyl) ester (9CI) (CA INDEX NAME)

Absolute stereochemistry.

ANSWER 4 OF 10 HCAPLUS COPYRIGHT 2007 ACS on STN (Continued)

REFERENCE COUNT: 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L8 ANSWER 5 OF 10 HCAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 1994:630627 HCAPLUS
DOCUMENT NUMBER: 121:230627.
TITLE: Design, synthesis and enzyme in

121:230627
Design, synthesis and enzyme inhibitory activities of new trifluoromethyl-containing inhibitors for angiotensin converting enzyme Ojima, Iwao: Jameison, Fabian A.; Pete, Bela; Radunz, Hans; Schittenhelm, Christine; Lindner, Hans J.; Emith, Arturo E.
Dep. Chem., State Univ. New York, Stony Brook, NY, 11794-3400, USA
Drug Design and Discovery (1994), 11(2), 91-113
CODEN: DDDIEV; ISSN: 1055-9612
Journal AUTHOR(S):

CORPORATE SOURCE:

SOURCE:

DOCUMENT TYPE: LANGUAGE:

UAGE: English Entered STN: 12 Nov 1994

Trifluoromethyl-containing analogs of captopril (I) as well as analogs and homologs of enalaprilat were prepared and evaluated for inhibition of angiotensin converting system (ACE). Direct substitution of trifluoromethyl for the produced a very potent captopril analog with an ICSO of 3 + 10-10 M in vitro. Bydrophobicity and conformational effects of trifluoromethyl group are among the reasons accounting for this activity. Structure-activity relation is studied based on mol. mechanics endances program. Simultaneous incorporation of trifluoromethyl and an indoline residue unexpectedly yielded a less potent captopril analog (ICSO = 8 + 10-8 M). Enalaprilat analogs derived from replacement of the alanine residue with trifluoromorvaline and trifluoromorleucine residues gave moderately potent compds. (ICSO = 2-6 + 10-8 M). The structure-activity relation for these fluoromenalaprilat analogs is discussed in comparison with known analogs.

158140-42-2P IS8140-43-3P 158249-81-1P 158249-82-2P
RL: SPN (Synthetic preparation); PREP (Preparation) (preparation of, as intermediate for captopril or enalaprilat analog) 158140-42-2 HCAPLUS
L-Proline, 1-(N-(1-carbomy-3-phenylpropyl)-5.5,5-trifluoro-L-norvalyl]-, 2-(1.1-dimethylethyl) ester, (S)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

L8 ANSWER 5 OF 10 HCAPLUS COPYRIGHT 2007 ACS on STN Absolute stereochemistry.

ANSWER 5 OF 10 HCAPLUS COPYRIGHT 2007 ACS on STN

158140-43-3 HCAPLUS L-Proline, 1-(N-(1-carboxy-3-phenylpropyl)-6,6,6-trifluoro-L-norleucyl]-, 2-(1,1-dimethylathyl) ester, (5)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

158249-81-1 HCAPLUS L-Proline, 1-[N-(1-carboxy-3-phenylpropy1)-5,5,5-trifluoro-L-norvaly1]-,2-(1,1-dimethylethyl) ester, (R)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

158249-82-2 HCAPLUS L-Proline, 1-(N-(1-carboxy-3-phenylpropyl)-6,6,6-trifluoro-L-norleucyl]-, 2-(1,1-dimethylethyl) ester, (R)- (9CI) (CA INDEX NAME)

L8 ANSWER 6 OF 10 HCAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER:
1990:235824 HCAPLUS
1171LE:
112:235824
Angiotensin converting enzyme inhibitors. 9. Novel
[[N-(1-carboxyl-3-phenylpropyl)amino]acyl]glycine
derivatives with diuretic activity
W.r Regan, John Ar. Henard, Paul R.r. Desai, Rohit;
Golec, F. S.r Reilly, Laurence W.r Goetzen, Thomas; et
al.
CORPORATE SOURCE:
SOURCE:
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AUGUAGE:
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DOCUMENT TYPE: Journa
LANGUAGE: Englis
OTHER SOURCE(5): CASREA
ED Entered STN: 23 Jun 1990

$$\Pr_{\text{Ph}\,(\text{CH}_2)} = \Pr_{\text{H}\,\text{CO}_{2R}} \Pr_{\text{HN}} \Pr_{\text{S}_2} \Pr_{\text{SO}_{2RH}_2}$$

A series of mols. having sulfonamide diuretic moleties covalently linked to non-sulfhydryl angiotensin converting enzyme (ACE) inhibitors, e.g. I [R = Et, X = Ala, Z = NMecIE2, (S)-CH(CHZCHMe2)) R = H, X = Ala, Lys, Lys(COZCHZPh), Z = CHZ R = H, X = Ala, Z = CHZ12), (S)-CHCH2, were prepared and tested for both activities. I50 values for ACE inhibition as low as 7 nM were observed Discernable diuretic activity was seen for several hydrochlorothiazide-based mols. Effects of the ACE inhibitory and diuretic activity was seen for several 126849-86-3P

126849-86-3P
RL: RCT (Reactant): SPN (Synthetic preparation): PREP (Preparation): RACT (Reactant or reagent)
(preparation and deblocking of, with hydrogen chloride)
126849-86-3 ECAPUD:
L-Proline, 1-[N6-[3-(aminosulfonyl)-4-chlorobenzoyl]-N2-(1-carboxy-3-phenylpropyl)-L-lysyl]-, 2-(1,1-dimethylethyl) ester, (S)- (9CI) (CA INDEX NAME)

ANSWER 6 OF 10 HCAPLUS COPYRIGHT 2007 ACS on STN

ANSWER 7 OF 10 HCAPLUS COPYRIGHT 2007 ACS on STN (Continued)
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of, in prepn. of diuretics and antihypertensives)
85918-74-7 HCAPLUS
L-Prollne, 1-[N-(1-carboxy-3-phenylpropy1)-L-alany1]-, 2-(phenylmethy1)
ester, (S)- (9CI) (CA INDEX NAME)

L8 ANSVER 7 OF 10 HCAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 1989:458356 HCAPLUS
DOCUMENT NUMBER: 111:88356
Freparation of N-(1-carboxy-3-phenylpropyl) alanine
derivatives as diuretics and antihypertensives
Bretting, Claus Aage Svensgaard; Bruun, Hertar Feit,
PATENT ASSIGNEE(S): Bretting, Claus Aage Svensgaard; Bruun, Hertar Feit,
PATENT ASSIGNEE(S): Bretting, Claus Aage Svensgaard; Bruun, Hertar Feit,
Patent Werner: Godffredsen, Wagn Ole
Leo Pharmaceutical Products Ltd. A/S, Den.
CODE: BAXXDU
DOCUMENT TYPE: Patent
LNGUAGE: English
FAMILY ACC. NUM. COUNT: 1

DOCUMENT TYPE: LANGUAGE: FAMILY ACC. NUM. COUNT: PATENT INFORMATION:

KIND ----DATE APPLICATION NO. DATE GB 2207129 A
PRIORITY APPLN. INFO.:
ED Entered STN: 20 Aug 1989
GI 19890125 19870713 19870713

$$Q^{1-} \qquad \qquad \stackrel{H}{\underset{H}{\longrightarrow}} \qquad Q^{2-} \qquad \qquad Q^{2-} \qquad \qquad Q^{2-2}$$

(5,5)-PhCH2CH2CH(CO2R1)NHCHMeCOR [I; R = azole and azine groups Q1-Q3, RANCH2CO2H: ≥1 of R1,R2 = R5CO2Z and the other may be H, alkyl, aralkyl; R4 = 2-indanyl; R5 = residue of a compound with diuretic and/or saluretic activity; Z = CHR3, CH2CH(GH)CHZ, CH2CR6CHCH2; R3 = H, alkyl, aralkyl; R6R7 = OCO2] were prepared as diuretics and antihypertensives (no data). To 3-ethylamino-4-phenoxy-5-sulfamoylbenzoic acid in CH2C12 taining NaHCO3 and Bu4NHSO4 in H2O was added C1SO3CH2C1 in CH2C12 and stirring was continued 15 min to give the chlocomethyl ester Q4CH2C1 which was stirred 6 days with Q3COCH2Ph (R2 = K) to give Q3COCH2Ph (R2 = CH2Q4). The latter was hydrogenolized to Q3H (R2 = CH2Q4) which was stirred 5 h with I (R = R1 = H) in DMF containing hydroxybenzotriazole and DCC to give I (R =

R1 = H, R2 = CH2Q4). IT 85918-74-7

L8 ANSWER 8 OF 10 HCAPLUS COPYRIGHT 2007 ACS ON STN ACCESSION NUMBER: 1989:213348 HCAPLUS DOCUMENT NUMBER: 110:213348

110:213348
Preparation of alanylproline derivatives usable in the drug industry
Fodor, Tamas; Fischer, Janos; Stefko, Bela; Dobay, Laszlo
Richter, Gedeon, Vegyeszeti Gyar Rt., Hung.
Hung. Teljes, 16 pp.
CODEN: HUXXBU

INVENTOR(S):

PATENT ASSIGNEE(S): SOURCE:

DOCUMENT TYPE: Patent

Hungarian COUNT:

FAMILY ACC. NUM. CO PATENT INFORMATION:

PATENT NO. KIND DATE APPLICATION NO. DATE HU 44578 A2
PRIORITY APPLN. INFO.:
OTHER SOURCE(5): MARPA
ED Entered STN: 10 Jun 1989 19880328 19890130 HU 1986-2688 19860627 HU 1986-2688 MARPAT 110:213348

(S) (S) PhCH2CH2CHNHCHR¹CON (5) CO2R со2н

AB Title compds. (I; R = H, protective group; Rl = alkyl, alkylamino) are prepared by reduction of the dihydrofuranone derivs. II.

N-[5(R)-Phenyldihydro2(3H) furanon-3(S)-yl]-(S)-alanyl-(S)-proline benzyl ester-HCl (preparation given) was hydrogenated in MeOH, over Pd/charcoal, to give N-[1(S)-carboxy-3-phenylpropyl]-(S)-alanyl-(S)-proline.

1 20439-27-2P
RL: SPN (Synthetic preparation); PREP (Preparation)

(preparation of)
120439-27-2 HCAPLUS
L-Prollne, 1-[N-(1-carboxy-3-phenylpropyl)-L-alanyl]-,
2-(1,1-dimethylethyl) ester, monohydrochloride, (5)- (9CI) (CA INDEX
NAME)

Absolute stereochemistry.

ANSWER 8 OF 10 HCAPLUS COPYRIGHT 2007 ACS on STN

• HCl

(Continued) ANSWER 9 OF 10 HCAPLUS COPYRIGHT 2007 ACS on STN

97590-00-6 HCAPLUS
L-Proline, 1-[N2-(1-carboxy-3-phenylpropyl)-(E)-4,5-didehydro-N6[(phenylmethoxy)carbonyl]]ysyl]-, 2-(phenylmethyl) ester, (S)- (9CI) (CA
INDEX NAME)

97590-04-0 HCAPLUS L-Proline, 1-[N2-(1-carboxy-3-phenylpropyl)-{2}-4,5-didehydro-N6-{(phenylmethoxy)carbonyl}lysyl}-, 2-(phenylmethyl) ester, (R)- (9CI) (CA INDEX NAME)

97531-72-1P 97531-72-1P
RI: RCT (Reactant): SPN (Synthetic preparation): PREP (Preparation): RACT
(Reactant or reagent)
(preparation and reductive alkylation of, with oxophenylbutanoic acid)
97531-72-1 HCAPIUS
L-Proline, 1-(N2-(1-carboxy-3-phenylpropyl)-(E)-4,5-didehydro-N6[(phenylmethoxy)carbonyl]lysyl]-, 2-(phenylmethyl) ester (9CI) (CA INDEX
NAME)

L8 ANSWER 9 OF 10 HCAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 1985:471710 HCAPLUS
DOCUMENT NUMBER: 103:71710
N-Carboxymethyl (unsaturated) lysyl and or (e-aminoalkyl) glycyl amino acid antihypertensive agents
PATENT ASSIGNEE(S): Patchett, Arthur A.; Wu, Mu T.
Herck and Co., Inc., USA
S. African, 64 pp.
CODEM: SFXXAB
DOCUMENT TYPE: English
FAMILY ACC. NUM. COUNT: 1

DOCUMENT TYPE: LANGUAGE: FAMILY ACC. NUM. COUNT: PATENT INFORMATION:

PATENT NO. KIND DATE APPLICATION NO. DATE

2A 8302509 A 19841128 ZA 1983-2509 19830411

PRIORITY APPLN. INFO::

Entered STN: 07 Sep 1985

A Title compde: RICH(COZN)NHCHR2CON[(CH2)nR3]CHR4COZR [R = H, alky1, aralky1, aryl; R1 = H, C1-12 alky1, cyclic alky1, unsatd. alky1, substituted alky1, (un)substituted aryl or heteroary1, etc. N2 = (CH2)pM(CH2)pMRS[X = CHCH0 rc. Ctplbond.C; R5 = H, alky1, aralky1, acyl; p = 0-3; q = 1, 2]; R3 = alky1, benzofused cycloalky1 or bicycloalky1, (un)substituted aryl or heteroary1, substituted alky1, aralky1, acyl; p = 0-3; q = 1, 2]; R3 = alky1, benzofused cycloalky1 or bicycloalky1, (un)substituted aryl or heteroary1, substituted alky1, R4 = H, alky1; R3 and R4 may be joined with carbon atoms to form a ring; n = 0-4] were prepared as antihypertensives (no data) due to their ability to inhibit angiotensin-converting enzyme. Thus, trans-HZNCHICH(CHCHCHCHCH(NH2)CO2H was treated with N-benzylowycarbonylowy-5-norbornene-2, 3-dicarboximide in HZO and 0.5M sethanolic KOH to give 39% trans-ZNHCHZCH:CHCHCHCH(NH2)CO2H (Z = PhCH2O2C), which was treated with Nel-Pro-OCH2Ph. HCl by DCC in CH2CI2 containing EU3N to give trans-ZNHCHZCH(CHCHCH(NHBoC)CO2H. The latter was somer A and B. I isomer A was Boc-deblocked by CF3OCZH and then treated with PhCHZCHICCCO2H in the presence of NaBH3CN to give 47% trans-RONNCHZCH:CHCHCHCH(NHCHCCO2D-Pro-OCH2Ph (I), which was isolated as isomer A and B. I isomer A was Boc-deblocked by CF3OCZH and then treated with PhCHZCHICCCO2H in the presence of NaBH3CN to give 47% trans-RONNCHZCH:CHCHCHCH(NHCH(CO2N)-ICHCH2CH)CHCHCHCHC)-Pro-OCH2Ph (I), which was deblocked by HBF/HDAc to give 62% II (R6 = R7 = H).

97589-99-69 97590-00-69 97590-00-69 97590-00-60 97590-00-6

ANSWER 9 OF 10 HCAPLUS COPYRIGHT 2007 ACS on STN (Continued)

ΙT

97590-05-1P
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of)
97590-05-1 HCAPLUS
L-Proline, 1-[N2-(1-carboxy-3-phenylpropyl)-(Z)-4,5-didehydro-N6[(phenylmethoxy)carbonyl]]ysyl]-, 2-(phenylmethyl) ester, (S)- (9CI) (CA
INDEX NAME)

L8 ANSWER 10 OF 10 HCAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 1983:488574 HCAPLUS
DOCUMENT NUMBER: 99:88574
Amino acid derivatives as antihypertensives
Harris, Elbert E.; Patchett, Arthur A.; Tristram,
Edward W.; Wyvratt, Matthew J.
Merck and Co., Inc., USA
U.S., 33 pp. Cont.-in-part of U.S. Ser. No. 79,898,
abandoned.
CODEN: USXXAM
DOCUMENT TYPE:
LANGUAGE: Patent
EANGUAGE: Patent
EANGUAGE: 1982
ATENT INFORMATION: 2 DOCUMENT TYPE: LANGUAGE: FAMILY ACC. NUM. COUNT: PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PATENT NO. US 4374829 CS 237325 CS 237326 CS 237327 CS 237328 US 4472380 CA 1275349 CA 1300313 CA 1262684 CA 1276559 CA 1275550 CA 1275550	KIND B2 B2 B2 B2 B2 C2 C2 AC2 C2 C2	19830222 19850716 19850716 19850716 19850716 19850716 19840918 19901016 19920505 19891107 19901120 19901016	WELLCATION NO. US 1981-235335 CS 1982-1339 CS 1982-1340 CS 1982-1341 CS 1982-1342 US 1982-423916 CA 1986-518334 CA 1986-518335 CA 1988-576715 CA 1988-607198	DATE
PRIORITY APPLIN. INFO.:		23301010	US 1978-968249 A US 1979-36279 A US 1979-79898 A CA 1979-341340 A CS 1979-8645 A	2 19781211 2 19790507 2 19791009 3 19791206 3 19791211 3 19810217

CS 1979-6645 A3 19791211
US 1981-235335 A3 19810217
OTHER SOURCE(S): CASREACT 99:88574
ED Entered STN: 12 May 1984
AB RCCCRIRZHEICERSCONR4CR5R7CORG [R.R6 = OH, alkow, alkenowy, dialkylaminolakowy, acylaminoalkowy, acyloxyalkowy, (un)substituted aryloxy or aralkowy, NHZ, alkylamino, dialkylamino, acylalkylamino, NHOH; R1 = H, Cl-20 alkyl, substituted alkyl or Ph, (un)substituted aralkyl, heteroaralkyl, aralkenyl or heteroaralkenyl; R2, R7 = H, alkyl; R3 = H, (un)substituted alkyl or phenylalkyl; R4 = H alkyl; R5 = (un)substituted alkyl or phenylalkyl; NHACR5 = (un)substituted alkyl or phenylalkyl; NHACR5 = (un)substituted cring) were prepared as antihypertensives and angiotensin-converting enzyme inhibitors (no data). Thus, H-L-Ala-L-Pro-OH was condensed with PHCH2COCOZH in the presence of NaBH3CN to give diastereomeric PHCH2CH(COZH)-L-Ala-L-Pro-OH.

18 S518-69-0P
RL: RCT (Reactant): SFN [Synthetic preparation): PREP (Preparation); RACT (Reactant or reagent) (preparation and hydrogenolysis of)
N S5518-69-0P HCAPUS
CN L-Proline, 1-[M2-(1-carboxy-3-phenylpropyl)-N5-[mino(nitroamino)methyl)-L-ornithyl)-, 2-(phenylmethyl) ester (9CI) (CA INDEX NAME)

ANSWER 10 OF 10 HCAPLUS COPYRIGHT 2007 ACS on STN (CH2) 1

IT

85918-74-7P
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of)
85918-74-7 HCAPLUS
L-Proline, 1-[N-(1-carboxy-3-phenylpropyl)-L-alanyl]-, 2-(phenylmethyl)
ester, (5)- (9C1) (CA INDEX NAME)

=> log y

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ENTRY SESSION
FULL ESTIMATED COST
57.90
408.41

DISCOUNT AMOUNTS (FOR QUALIFYING ACCOUNTS)

SINCE FILE TOTAL
ENTRY SESSION

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CA/CAplus updated with revised CAS roles

CA/CAplus enhanced with patent applications from India

NEWS 24 JAN 29 PHAR reloaded with new search and display fields

NEWS 25 JAN 29 CAS Registry Number crossover limit increased to 300,000 in multiple databases

NEWS 26 FEB 13 CASREACT coverage to be extended

NEWS 27 Feb 15 PATDPASPC enhanced with Drug Approval numbers

NEWS 28 Feb 15 RUSSIAPAT enhanced with pre-1994 records

NEWS 29 Feb 23 KOREAPAT enhanced with IPC 8 features and functionality

NEWS EXPRESS NOVEMBER 10 CURRENT WINDOWS VERSION IS V8.01c, CURRENT MACINTOSH VERSION IS V6.0c(ENG) AND V6.0Jc(JP), AND CURRENT DISCOVER FILE IS DATED 25 SEPTEMBER 2006.

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chain nodes : 6 7 8 9 10 11 13 19 20 21 22 23 24 26 27 ring nodes : 1 2 3 4 5 12 14 15 16 17 18 chain bonds : 2-6 3-22 6-7 6-13 7-8 8-9 9-10 9-19 10-11 11-12 19-20 19-21 22-23 22-24 23-26 26-27 ring bonds : 1-2 1-5 2-3 3-4 4-5 12-14 12-18 14-15 15-16 16-17 17-18 exact/norm bonds : 1-2 2-3 2-6 6-13 7-8 8-9 22-23 22-24 23-26 26-27 exact bonds : 1-5 3-4 3-22 4-5 6-7 9-10 9-19 10-11 11-12 normalized bonds : 12-14 12-18 14-15 15-16 16-17 17-18 19-20 19-21 isolated ring systems: containing 1: 12:

Match level:

1:Atom 2:Atom 3:Atom 4:Atom 5:Atom 6:CLASS 7:CLASS 8:CLASS 9:CLASS 10:CLASS 11:CLASS 12:Atom 13:CLASS 14:Atom 15:Atom 16:Atom 17:Atom 18:Atom 19:CLASS 20:CLASS 21:CLASS 22:CLASS 23:CLASS 24:CLASS 26:CLASS 27:CLASS

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PROJECTED ANSWERS: 0 TO 0

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FULL SCREEN SEARCH COMPLETED - 2947 TO ITERATE

100.0% PROCESSED 2947 ITERATIONS 18 ANSWERS

SEARCH TIME: 00.00.01

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L4 ANSWER 1 OF 2 HCAPLUS COPYRIGHT 2007 ACS on STN

ED Entered STN: 23 Dec 2004
ACCESSION NUMBER: 2004:1124626 HCAPLUS
DOCUMENT NUMBER: 142:79913

TITLE: Enalaptil-nitroxy derivatives and related compounds as acc inhibitors for the treatment of cardiovascular diseases Almirante, Nicoletta; Ongini, Ennio: Del Soldato, INVENTOR(S): Piero
Nicox S. A., Fr.
PCT Int. Appl., 132 pp.
CODEN: PIXXD2 PATENT ASSIGNEE(5): SOURCE:

DOCUMENT TYPE: Patent LANGUAGE: English FAMILY ACC. NUM. COUNT: PATENT INFORMATION:

PATENT NO. KIND DATE APPLICATION NO. DATE 20040611 W0 2004110432
W1: AE, AG,
CN. CO,
GE, GH,
LK, LR,
NO. NZ,
TJ. TM,
RW1: BW. GH,
AZ, BY,
EE, ES,
SN, TD,
AU 200424681
EP 1635816
R1: AT, BE, WO 2004110432 WO 2004-EP51089 A1 20041223 A1 20041223 W0 2004-EF\$1089

MA, AT, AN, AN, AB, BB, BG, BR, BW, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, HR, HU, ID, IL, IN, IS, JP, KE, KG, LT, LU, LV, MA, MD, MG, MK, MN, MY, EG, PH, PL, PT, RO, RU, SC, SD, SE, TR, TT, TZ, UA, UG, US, UZ, VC, VN, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, FR, GB, GR, HU, IE, IT, LU, MC, NL, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, 20040611
BY, BZ, CA, CH,
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UG, ZM, ZW, AM,
CY, CZ, DE, DX,
FL, FT, RO, SE,
GW, ML, MR, NE, CR, GM, LS, OM, TN, GM, KG, FI, TR, AU 2004246821 A1 20041223
CA 2529478 A1 20041223
FP 1635916 A1 20060322
R: AT, BE, CH, DE, DK, ES, FR,
DR 2004011430 A 20060726
US 2005004100 A1 20050106
NO 2006000268 A 2006 AU 2004-246821
CA 2004-2529478
EP 2004-741779
I, GR. IT. LI. LU,
EE, HJ. PI., SK
BR 2004-11430
CN 2004-80017127
US 2004-869038
NO 2006-268
EP 2003-101796
WO 2004-EF51089 20040611 20040611 20040611 GB, GR, CZ, EE, SE, MC, PT, 20040611 20040611 20040617 20060118 PRIORITY APPLN. INFO .:

ZOUGO18
EP 2003-101796 A 20060118
EP 2003-101796 A 20030619
2004-EP51089 V 20040611
ER SOURCE(S): NARPAT 142:79913
Disclosure is compds. with a general formula of A-(X1-ONO2)5, wherein A is a known ACE-inhibitor such as enalapril and X1 is a spacer such as a (C1-C6)-alkylene. The compds. can be used as ACE-inhibitors for the treatment of cardiovascular and renal diseases and inflammatory processes. The compds. have an improved pharmacol. activity when compared with the structurally closest related prior art compound For example, synthesized N-[(15)-1-ethoxycarbonyl-3-phenylpropyl]-L-alanyl-L-proline
3-nitroxypropyl ester hydrogen maleate was found to have good vasorelaxation property.
811787-07-2 811787-19-4 811787-13-0
811787-15-2 811787-25-4 811787-27-6
811787-31-2 811787-33-4 811787-35-6
811787-38-9 OTHER SOURCE(S):

ANSWER 1 OF 2 HCAPLUS COPYRIGHT 2007 ACS on STN

PAGE 1-B

(Continued)

PAGE 1-A

811787-15-2 HCAPLUS
L-Proline, N2-[(1\$)-1-carboxy-3-phenylpropyl]-N6[((nitrooxy)methoxy]carbonyl]-L-lysyl-, 2-[3-(nitrooxy)propyl] ester (9CI)
(CA INDEX NAME) .

Absolute stereochemistry

811787-17-4 HCAPLUS L-Proline, N2-[(15)-1-carboxy-3-phenylpropy1]-N6-[(Initrooxy)methoxy]carbony1]-L-lysyl-, 2-[4-(nitrooxy)buty1] ester (9CI) (CA INDEX NAME)

Absolute stereochemistry.

ANSWER 1 OF 2 HCAPLUS COPYRIGHT 2007 ACS on STN (Continued)
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(enelaptil-nitroxy derivs, and related compd. as ACE inhibitors for the
treatment of cardiovascular and renal diseases)
811787-07-2 HCAPLUS
L-Froline, N2-[(15)-1-carboxy-3-phenylpropyl]-N6-[[4(nitrooxy)butoxy]carbonyl]-L-lysyl-, 2-[3-(nitrooxy)propyl] ester (9CI)
(CA INDEX NAME)

Absolute stereochemistry.

811787-09-4 HCAPLUS
L-Proline, N2-[(15)-1-carboxy-3-phenylpropyl]-N6-[[4(nitrooxy)butoxy)carbonyl]-L-lysyl-, 2-[4-(nitrooxy)butyl] ester (9CI)
(CA INDEX NAME) 811787-09-4

Absolute stereochemistry.

811787-13-0 HCAPLUS
L-Pcoline, N2-[(15)-1-carboxy-3-phenylpropyl]-N6-[[4-(nitrooxy)butoxy]carbonyl]-L-lysyl-, 2-[2-[2-(nitrooxy)ethoxy]ethyl] ester
(9CI) (CA INDEX NAME)

Absolute stereochemistry.

ANSWER 1 OF 2 HCAPLUS COPYRIGHT 2007 ACS on STN

811787-19-6 HCAPLUS
L-Proline, N2-[(15)-1-carboxy-3-phenylpropyl]-N6[(initroxy)methoxy]carbonyl]-L-lysyl-, 2-[2-[2-(nitroxy)ethoxy]ethyl]
ester (9CI) (CA INDEX NAME)

Absolute stereochemistry.

811707-23-2 HCAPLUS L-Proline, N2-{[15]-1-carboxy-3-phenylpropyl}-N6-[{1-(nitrooxy)ethoxy)carbonyl]-L-lysyl-, 2-[3-(nitrooxy)propyl] ester (9CI) (CA INDEX NAME)

Absolute stereochemistry.

811787-25-4 HCAPLUS L-Proline, N2-{[15]-1-carboxy-3-phenylpropyl}-N6-{[1-(nitrooxy)ethoxy|carbonyl}-L-lysyl-, 2-{4-(nitrooxy)butyl} ester (9CI) (CA INDEX NAME)

Absolute stereochemistry.

ANSWER 1 OF 2 HCAPLUS COPYRIGHT 2007 ACS on STN (Continued)

811787-27-6 HCAPLUS
L-Proline, N2-{[15]-1-carboxy-3-phenylpropyl]-N6-[[1-(nitrooxy)ethoxy]carbonyl]-L-lysyl-, 2-[2-(nitrooxy)ethoxy]ethyl} ester
(9CI) (CA INDEX NAME)

Absolute stereochemistry

811787-31-2 HCAPLUS L-Proline, N-[(15)-1-carboxy-3-phenylpropyl]-L-alanyl-, 2-[3-(nitrooxy)propyl] ester (9CI) (CA INDEX NAME)

Absolute stereochemistry.

811787-33-4 HCAPLUS L-Proline, N-[(15)-1-carboxy-3-phenylpropyl]-L-alanyl-, 2-[4-(nitrooxy)butyl] ester (9CI) (CA INDEX NAME)

ANSWER 1 OF 2 HCAPLUS COPYRIGHT 2007 ACS on STN (Continued) ANSWER 1 OF 2 HCAPLUS COPYRIGHT 2007 ACS on STN (Continued)

811787-35-6 HCAPLUS
L-Proline, N-[(1S)-1-carboxy-3-phenylpropyl]-L-alanyl-,
2-[5-(nitrooxy)pentyl] ester (9CI) (CA INDEX NAME)

811787-38-9 HCAPLUS L-Proline, N-[(1S)-1-carboxy-3-phenylpropyl]-L-alanyl-, 2-[2-[2-(nitrooxy)ethoxy]ethyl] ester (9CI) (CA INDEX NAME)

Absolute stereochemistry.

REFERENCE COUNT:

THERE ARE 1 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

DATE 20030908

L4 ANSWER 2 OF 2 HCAPLUS COPYRIGHT 2007 ACS on STN

ED Entered STN: 26 Mar 2004
ACCESSION NUMBER: 2004:252532 HCAPLUS
DOCUMENT TYPE: COPYRIGHT 2007 ACS on STN

ENTER ASSIGNEE(S): 7 PATENT ASSIGNEE(S): 7 COPYRIGHT 2007 ACS on STN

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DOCUMENT TYPE: LANGUAGE: FAMILY ACC. NUM. COUNT: PATENT INFORMATION:

PATENT NO.			KIND DATE			APPLICATION NO.								
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WO	2004	0247	54		A1		2004	0325		WO 2	003-	JP11	420	
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CA 2498757 A1 20040325 CA 2003-2498757 20030908
AU 2003261989 A1 2004030 AU 2003-261389 20030908
FP 153158 A1 2004030 AU 2003-261389 20030908
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R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,
CN 1681839 A 20051012 CH-2003-821432
CN 1681839 A 20051012
PRIORITY APPLN. INFO:

COTHER SOURCE(S):

MARPAT 140:276202

THER SOURCE(S):

OTHER SOURCE(S): WO 2003-JP11420 W 20030908

R SOURCE(S): MARPAT 140:276202

1-[N-{(1S)-1-carboxy-3-phenylpropyl]-L-alanyl]-L-proline esters or pharaaceutically acceptable salts thereof are useful as a prodrug for enalaprilat, which is a medicine useful in the prevention of and treatments for, e.g., circulatory diseases such as hypertension, cardiac diseases (cardiac hypertrophy, cardiac failure, myocardial infarct, etc.), nephritis, and apoplemy. A medicine containing either of these is suitable for use as a preparation for percutaneous administration, especially an sive

adhesive
patch, from the standpoints of medicinal activity and use. For example, a composition was formulated containing
1-{N-{(15)-1-carboxy-3-phenylpropyl]-Lalanyl]-L-proline 2-hydroxyethyl ester (preparation given), iso-Pr
myristate,

state, lauromacrogol, Quintac 3421, Quintone M100, and paraffin oils and spread on a PET film to give an adhesive patch. 674285-96-2P 674285-97-3P 674285-98-4P 674285-99-5P 674286-00-1P

674285-99-5P 674286-00-1P
RL: SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREF (Preparation); USES (Uses)
(preparation of proline esters as prodrugs for enalaprilat for percutaneous administration)

ANSWER 2 OF 2 HCAPLUS COPYRIGHT 2007 ACS on STN (Continued) 614285-96-2 HCAPLUS L-Proline, N-{(1S)-1-carboxy-3-phenylpropyl]-L-alanyl-, 2-(2-hydroxyethyl) ester (9CI) (CA INDEX NAME)

Absolute stereochemistry.

674285-97-3 HCAPLUS L-Proline, N-{(1S)-1-carboxy-3-phenylpropyl}-L-alanyl-, 2-(3-hydroxypropyl) ester (9CI) (CA INDEX NAME)

Absolute stereochemistry.

674285-98-4 HCAPLUS . L-Proline, N-[(IS)-1-carboxy-3-phenylpropyl]-L-alanyl-, 2-(4-hydroxybutyl) ester (9CI) (CA INDEX NAME)

Absolute stereochemistry.

L4 ANSWER 2 OF 2 HCAPLUS COPYRIGHT 2007 ACS on STN (Continued)

674285-99-5 HCAPLUS L-Proline, N-[(18)-1-carboxy-3-phenylpropy1]-L-alanyl-, 2-[2-(2-methoxyethoxy)ethy1] ester (9CI) (CA INDEX NAME)

Absolute stereochemistry.

674286-00-1 HCAPLUS L-Proline, N-[(1S)-1-carboxy-3-phenylpropy1]-L-alanyl-, 2-(2-methoxyethy1) ester (9CI) (CA INDEX NAME)

REFERENCE COUNT:

THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

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. => s enalaprilat
           980 ENALAPRILAT
 => s 15 and prol
 => s 15 and prol?
         559583 PROL?
             92 L5 AND PROL?
 L6
 => s 15 and 13
              2 L3
 L7
              1 L5 AND L3
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L7 ANSWER 1 OF 1 HCAPLUS COPYRIGHT 2007 ACS on STN								
ED Entered STN: 26 Mar 2004								
ACCESSION NUMBER: 2004:252532 HCAPLUS								
DOCUMENT NUMBER: 140:276202								
TITLE: Proline esters and preparations containing the same								
for percutaneous administration								
INVENTOR(S): Furuishi, Takayuki: Minami, Kunihiro: Minowa,								
Takayuki: Komine, Miho: Kimura, Kunihiko								
PATENT ASSIGNEE(S): Toaeiyo Ltd., Japan								
SOURCE: PCT Int. Appl., 38 pp.								
CODEN: PIXXD2								
DOCUMENT TYPE: Patent								
LANGUAGE: Japanese								
FAMILY ACC. NUM. COUNT: 1								
PATENT INFORMATION:								
PATENT NO. KIND DATE APPLICATION NO. DATE								
WO 2004024754 A1 20040325 WO 2003-JP11420 20030908								
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN,								
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CA 2498757 A1 20040325 CA 2003-2498757 20030908								
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CN 1681839 A 20051012 CN 2003-821438 20030908 US 2005288232 A1 20051229 US 2005-527062 20050309								
US 2005288232 A1 20051229 US 2005-527062 20050309								
PRIORITY APPLN. INFO.: JP 2002-265276 A 20020911								
WO 2003-JP11420 W 20030908								

OTHER SOURCE(s):

ARRPAT 140:276202

AB 1-(N-[(1S)-1-carboxy-3-phenylpropyl)-L-alanyl}-L-proline esters or pharmaceutically acceptable salts thereof are useful as a prodrug for enalaprilat, which is a medicine useful in the prevention of and treatments for, e.g., circulatory diseases such as hypertension, cardiac diseases (cardiac hypertrophy, cardiac failure, myocardial infarct, etc.), nephritis, and apoplexy. A medicine containing either of these is suitable for use as a preparation for percutaneous administration, especially an adhesive patch, from the standpoints of medicinal activity and use. For example, a composition was formulated containing
1-N-((1S)-1-carboxy-3-phenylpropyl)-Lalanyl-L-proline 2-hydroxyethyl ester (preparation given), iso-Pr
myristate,
lauromacrogol, Quintac 3421, Quintone M100. and paraffic oils and acceptable and advanced to the containing that the composition was formulated containing the composition was composition which was a composition was a composition which was a composition which was a composition which was a composition which

state, lauromacrogol, Quintac 3421, Quintone H100, and paraffin oils and spread on a PET film to give an adhesive patch. 674285-96-2P 674285-97-3P 674285-98-4P 674285-99-5P 674286-00-1P

RL: SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological

ANSWER 1 OF 1 HCAPLUS COPYRIGHT 2007 ACS on STN (Continued)

674285-99-5 HCAPLUS L-Proline, N-[(1S)-1-carboxy-3-phenylpropyl]-L-alanyl-, 2-[2-(2-methoxyethoxy)ethyl] ester (9CI) (CA INDEX NAME)

Absolute stereochemistry.

674286-00-1 HCAPLUS L-Proline, N-[(15)-1-carboxy-3-phenylpropyl]-L-alanyl-, 2-(2-methoxyethyl) estar (9C1) (CA INDEX NAME)

Absolute stereochemistry.

3

REFERENCE COUNT:

THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

ANSWER 1 OF 1 HCAPLUS COPYRIGHT 2007 ACS on STN (Continued) study); PREP (Preparation); USES (Uses) (prepn. of proline esters as prodrugs for enalaprilat for percutaneous adainstration) 674285-96-2 HCAPLUS L-Proline, N-[(1S)-1-carboxy-3-phenylpropyl]-L-alanyl-, 2-(2-hydroxyethyl) ester (9CI) (CA INDEX NAME)

Absolute stereochemistry.

674285-97-3 HCAPLUS L-Proline, N-[(1S)-1-carboxy-3-phenylpropyl]-L-alanyl-, 2-(3-hydroxypropyl) ester (9CI) (CA INDEX NAME)

(CH2) 3 674285-98-4 HCAPLUS L-Proline, N-[(1S)-1-carboxy-3-phenylpropyl]-L-alanyl-, 2-(4-hydroxybutyl) ester (9CI) (CA INDEX NAME)

Absolute stereochemistry.

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•	ENTRY	SESSION
FULL ESTIMATED COST	28.81	201.12
DISCOUNT AMOUNTS (FOR QUALIFYING ACCOUNTS)	SINCE FILE	TOTAL
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CA SUBSCRIBER PRICE	-2.34	-2.34

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